THIS WEEK'S National Petroleum NEWS

Index to Coming Meetings

Wisconsin Petroleum Association, Hotel Pfister, Milwaukee, May 14.

Virginia Oil Men's Association, Patrick Henry Hotel, Roanoke, Va., May 14, 15.

National Oil Scouts Association of America, San Antonio, Tex., May 19, 20.

Natural Gasoline Association of America, Mayo Hotel, Tulsa, May 20, 21, 22.

Mid-Continent District, American Petroleum Institute, Division of Production, Mayo Hotel, Tulsa, May 23 and 24.

West Virginia Oil Marketers Association, Daniel Boone Hotel, Charleston, W. Va., June 12, 13.

American Society for Testing Materials, Atlantic City, N. J. June 23 to 27.

North American Gasoline Tax Conference, King Edward Hotel, Toronto, Ont., Sept. 2, 3, 4.

National Safety Council, Petroleum Section, Pittsburgh, Pa., Sept. 29 to Oct. 4.

Big Four State Jobbers Convention, (Missouri, Iowa, Kansas and Nebraska) Kansas City, Mo., Oct. 14, 15, 16.

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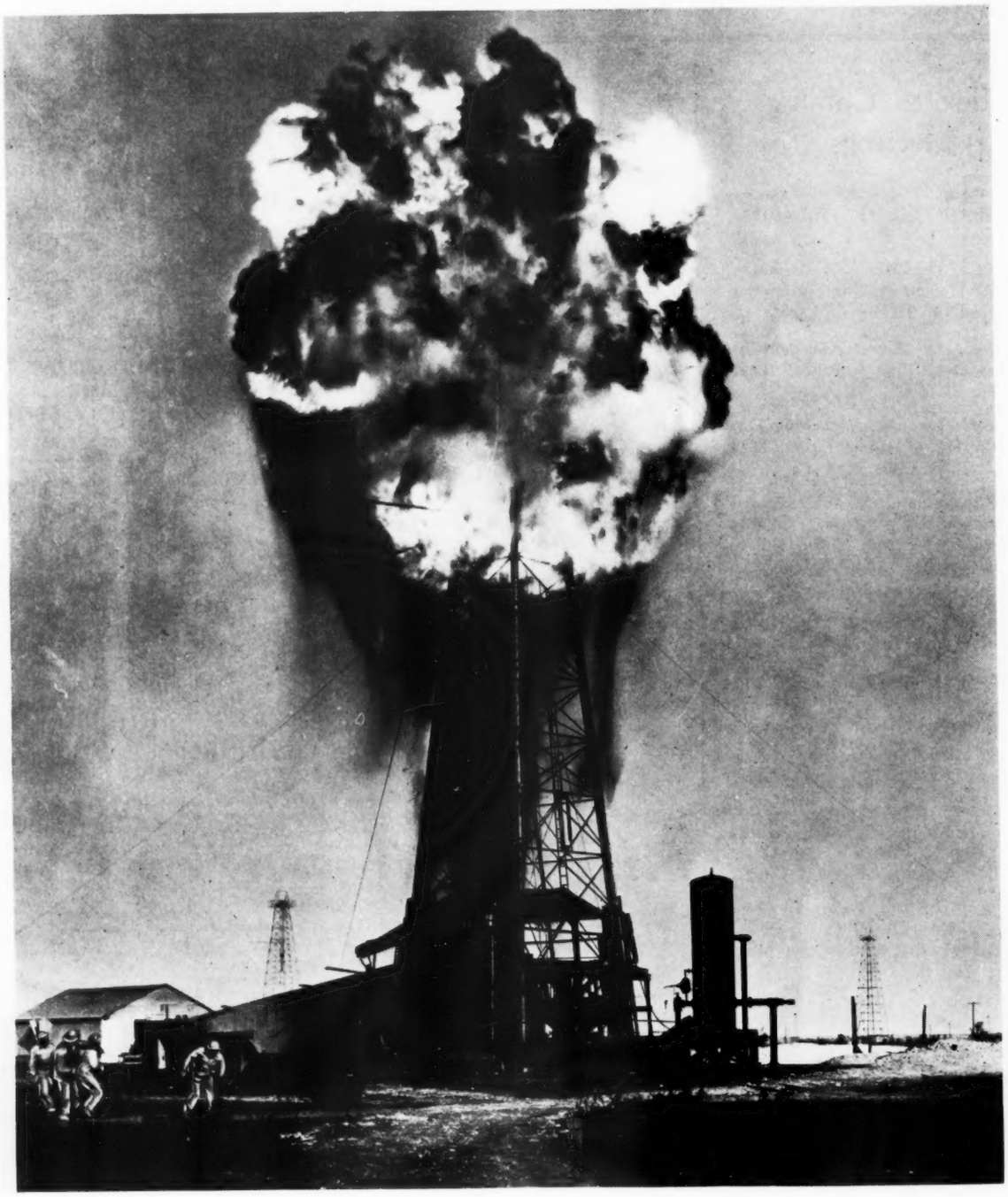
A New Well Bursts Into Flames



AN OIL well fire the second it started. The well is the Skelly Oil Co., No. 1 A University, in the Penn pool, Ector county, Texas. It had just been shot with 350 quarts and a photographer was waiting with his camera trained on the rig for the expected flow of oil.

He was not disappointed but, at the moment of the exposure, a spark caused by rocks hitting the steel crown sheaves ignited the oil and the resulting picture is one of an explosion getting started.

Note how some of the oil spray has not yet caught fire and that the main stream is untouched. The men on the left are just beginning to get under way. A second later the whole derrick was a mass of flame which was not extinguished for over 24 hours.

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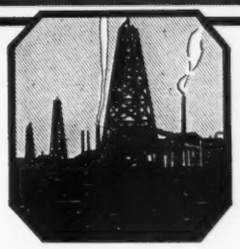

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Vol. 22 CLEVELAND, May 7 No. 19

Exclusive Right to Pump Color Scheme Upheld in Court Ruling

CLEVELAND, April 30

WHILE it is generally recognized that an oil company cannot secure the exclusive use of any particular color in identifying its gasoline, the courts in New York state have recently ruled that a company does have a property right in a combination of colors on its pumps and tanks used in a particular design to identify its product.

In the case in question, the Sun Oil Co. Philadelphia, secured a permanent injunction restraining one of the larger jobbers in northern New York from using its color combination and design of blue and yellow in connection with the sale of blue gasoline in that territory.

The jobber company was also enjoined from the use of any symbols, or designs or slogans, in connection with the sale of blue gasoline so nearly like those of the Sun Oil Co. as to deceive the public. The court's order was filed March 27.

The Sun Oil Co. introduced as evidence its advertising manuals and instructions and color charts for painting gasoline pumps and trucks and tank wagons to show its use of a particular color combination as a part of its method of identifying its blue gasoline in the mind of the public.

The following interesting points were brought out by the Sun Oil Co. in its complaint filed in court and were in the main supported by the findings of the court.

"That the natures of the products sold by the plaintiff (Sun Oil Co.) are such that they can only be identified by the container from which they are sold to the consumer; that a custom has grown up in the oil and gasoline trade of each company using a distinctive color combination and design for the marking of its oil hyboys and gasoline pumps to denominate its products to prospective purchasers, many of whom are driving along the highways at a fast rate of speed, often at night, and to whom printed matter would be indistinguishable.

"That, in conformity with this custom, the plaintiff adopted a color combination and design of blue and yellow to identify its products, and this color combination and design have been used by the plaintiff in connection with the sale of its products since about 1913; that this color combination and design of blue and yellow have appeared in the plaintiff's national advertising since the latter part of 1919; that this color combination and design have been painted on plaintiff's gasoline trucks, oil containers, drums, gasoline pumps and advertising signs and novelties consistently since the year 1919 to distinguish the plaintiff's business and has become a valuable part thereof.

The company went on at length to show it has spent millions in advertising its products in connection with this color combination and design to identify it in the mind of the public with Sun Oil products, and that the combination of the two colors has been worked into its slogans and trade names used in its advertising and on its vending equipment.

The company also set forth that, on April 26, 1927, it added a blue color to its gasoline to identify more clearly its products in the mind of the public; and that this blue colored motor fuel is not visible to the purchaser when dispensed from non-visible pumps; and that the public has become familiar with the plaintiff's color combination and design as painted on its gasoline pumps and has become accustomed to rely upon said color combination and design in purchasing its distinctive products."

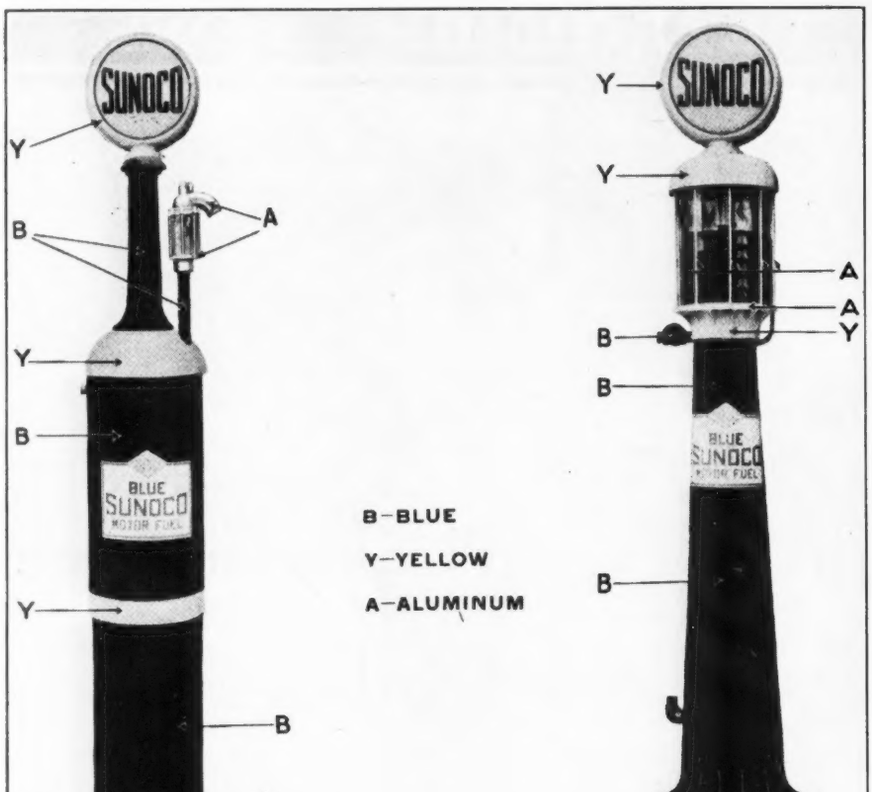
The Sun Oil Co. charged that its competitor, within the last few months, painted a number of its pumps in blue with yellow bands similar to the combination and design used by the

Big Savings Made Through California Curtailment

WASHINGTON, May 2.—California producers gained about $96,800,000 from Novemebr through March through curtailment of production the U. S. Chamber of Commerce was told at its annual meeting here this week in a presentation of the history and results of curtailment on the West coast by Herbert R. McMillan, president of the California Oil & Gas Association.

The estimate was given as proof that curtailment has paid. Mr. McMillian said further that recently he proposed a reduction in daily production to 550,000 barrels.

Oil received scant notice at the Chamber's meeting excepting for the McMillan address. Members of the Chamber's organization have observed that the oil men have been adverse to talk about their problems in such gatherings of business men.



Color combination used by the Sun Oil Co. on its gasoline pumps, to which its exclusive rights was upheld in a recent ruling in the New York courts. This specification card was introduced as evidence in the case

Sun Oil Co.; that it was furnishing its dealer with a blue gasoline and that the wording on the pump globes and the colors used in the wording were so similar to those used by the Sun Oil Co. as to be calculated to deceive the public. The court sustained the contention of the company and by injunction restrained the competing jobber from continuing its practice.

Delay Sought for Use Of Grease Meters

NEW YORK, May 3

POSTPONEMENT of the effective date of the proposed regulations of grease dispensing devices, will be asked of the National Conference on Weights and Measures by the American Petroleum Institute. Representatives of the institute's division of marketing will meet with the committee on specifications and tolerances of the conference June 2 in Washington.

The effective date had been set for July 1, 1930. Paul E. Hadlick, secretary of the division of marketing, said an investigation had revealed that while many oil companies have endeavored to obtain equipment necessary to comply with the conference's tentative specifications adopted last year, few makers of grease dispensing equipment have undertaken manufacture of accurate measuring devices and no suitable device to adapt present equipment to the requirements of the tentative specifications was on the market.

The institute has asked oil companies to send representatives to the conference and to notify it who the representatives will be. The conference at the U. S. Bureau of Standards in Washington begins June 3 and ends June 6.

Sun Oil Begins Pipe Line Terminal in Cleveland

CLEVELAND, May 5.—Construction work on the storage terminal of Sun Oil Co.'s gasoline pipe line from its Marcus Hook, Pa. refinery to the Great Lakes will begin this week. An option was taken up last week on the site in Cleveland.

Four 80,000 barrel storage tanks are to be erected at once, along with warehouses, garages, pumps and lines. Excavation work is to begin this week. The terminal is on a 24 acre tract at Independence rd. and Eggers st., with about 800 foot frontage on the Cuyahoga river. Water, rail, and pipeline facilities are available for moving gasoline.

The gasoline pipe line is expected to be completed this fall. The route through Ohio from Cleveland to Pittsburgh is being surveyed now, and work has started on the line from Marcus Hook to Pittsburgh. The pipe line will be 6 inches in diameter, and have a capacity of 15,000 barrels of gasoline a day. H. R. Swartwout is manager of Sun Oil Co. in Cleveland. To develop a market for its gasoline Sun Oil Co. entered the Cleveland market this spring with its pumps and leased a temporary bulk storage plant.

New Jersey Standard Wins S. O. Virginia Case

RICHMOND, Va., May 3.—A temporary injunction restraining the Standard Oil Co. of Virginia from continuing business operations under the title "Standard Oil" was made permanent by Judge D. Lawrence Groner when the case of the Standard Oil Co. of New Jersey against the Standard Oil Co. of Virginia was heard in the United States district court here this week.

In addition to being "enjoined and restrained from using the corporate name of Standard Oil Co. of Virginia," the state company was bonded in the sum of $1,000. The complainant company was made to pay court costs.

The injunction was first sought by the New Jersey company in October, 1929, and the preliminary hearing brought out the fact that the complainant company has been doing business since 1906, while the Standard Oil Co. of Virginia was not incorporated until September, 1929, in Virginia.

The New Jersey company stated in its bill that it would be unfairly and unlawfully deprived of the valuable good will now attached to its corporate name as well as its business.

Similar petitions have been presented in the district courts of South Carolina and West Virginia.

This week's permanent injunction provides that the corporation is "restrained from using any name so closely resembling the corporate name of the complainant, in sound or appearance, as to lead to confusion or uncertainty, and under such corporate name from engaging in any business or activities set out in the certificate of incorporation of the Standard Oil Co. of Virginia."

The Editors' Viewpoint

National Petroleum News

What Should be Sulfur Limit In Motor Gasoline?

ONE of the unsolved questions in the minds of the gasoline refining and automotive industries is that of the maximum amount of sulfur that may be permitted in motor gasoline without appreciable detriment to the automotive mechanism. The question has been studied in a more or less desultory manner by a few investigators, but very little has been published that will throw light on the problem.

Recent work by Diggs, and by Mougey, working under special operating conditions of low temperatures, etc., seems to indicate that a sulfur content of approximately 0.15 per cent will show some corrosion effects on the automotive engine at the temperatures employed. No data are available in the literature to show the actual road operating conditions under which deleterious effects may be expected from various amounts of sulfur, nor do we know the relative effect of different climatic conditions of temperature, atmospheric humidity, etc., in determining the maximum sulfur content that may be safely permitted.

The first sulfur requirement to be included in government specifications for motor gasoline was adopted about six years ago. The determination of the maximum permissible in this specification was based on the finding of the Bureau of Mines as to the sulfur content found in several hundred samples of commercial gasolines collected at various points in the United States. It was considered then that the limit agreed upon, 0.10 per cent, was a reasonable limit that would enable the government to obtain suitable gasoline throughout the country in any desired quantity which would not give corrosion trouble in motors.

No appreciable amount of exact data were available, from actual observation by competent investigators, to show that this limit was the proper one, it being considered that the gasolines then sold to the public were being used successfully unless information was obtainable to prove that trouble had been experienced by users from corrosion of motor parts which was traceable to sulfur in the fuel.

Since the time this specification was promulgated, conditions in the gasoline industry have changed. More intense competition has reduced the margin between refining costs and selling price of motor fuels; high sulfur crudes from West Texas and elsewhere have become important in the country's production of crude oil. Demand for gasoline has increased by leaps and bounds, so that cracking of heavier hydrocarbons, with correspondingly higher sulfur content of charging stocks and therefore of cracked distillate, has increased greatly in order to meet the demand. Refining costs have mounted, due to increased sulfur in distillates, gumming in cracked fuels, to further complicate the situation.

Furthermore, in the automotive industry, radical and important changes in design of motors and accessories have taken place. Thermostatic control of cooling jacket temperatures, crankcase ventilation, volatilization, of condensed water and unburned fuel from the crank case lubricant, filtration of oil, and other improvements have changed the conditions of operation of internal combustion motors.

It is well known that sulfur oxides are corrosive only when in the presence of water, which forms sulfur acids; water, then, is essential to corrosion in the crankcase or bearings, and if its presence is avoided, no corrosion is to be expected from sulfur dioxide or trioxide.

In any specification or in any situation, a requirement based essentially on the absence of definite information, or on empirical data or assumption, is supportable or excusable only until exact scientific investigation determines the proper and authentic limits that are proper to be included in that requirement. If the requirement places no especial hardship on anyone concerned, then its limits are of little importance, and exactness in their determination is not required.

It is the opinion of many interested in the sulfur problem, however, that a hardship is placed on both refiner and consumer of motor fuels by retaining the present limit on sulfur. Others disagree with this attitude, and believe that the limit can be raised only with the possible or probable result of loss and damage to automotive equipment.

But do we KNOW the facts in the case?

It is like neither the gasoline refiner nor the motor builder to continue indefinitely in the dark on any subject of considerable importance to the welfare of his business. Old-fashioned slipshod, haphazard, "rule-of-thumb" methods of carrying on these industries long since began to give place to exact, scientific methods; *guessing* has been supplanted by *knowing*.

Maybe we *should* hold down the sulfur content to its present limit. Maybe the motorist does obtain value received from the extra price necessary to pay to obtain fuel low in sulfur. Maybe he doesn't.

Refiners know that millions of dollars are spent each year in extra refining costs for reducing sulfur below the limit now set, that might be saved to them and to users provided it can be determined that fuels of higher sulfur content can be safely used. Such a saving should be made if possible.

Study of this problem should be in the hands of an agency as nearly unbiased as possible. In our opinion, it should be handled by a government organization equipped with suitable facilities for arriving at a dependable, definite and unprejudiced decision, the results of which can and will be accepted by manufacturer and consumer as representing the facts and on which action may be taken to set the limit of permissible sulfur at a figure which will result in the maximum economy to all concerned. Either the U. S. Bureau of Mines or Bureau of Standards is capable of carrying the matter to a satisfactory conclusion as the nature of the problem will permit.

The solution of the problem will not be too simple, it cannot be reached overnight; it will take time and the

collection of a mass of accurate, dependable data. But it is believed that the work should be done with as little delay as possible, to reach more definite conclusions.

Why not find out about it?—A. L. F.

Sunday Shut-Down Is Ended

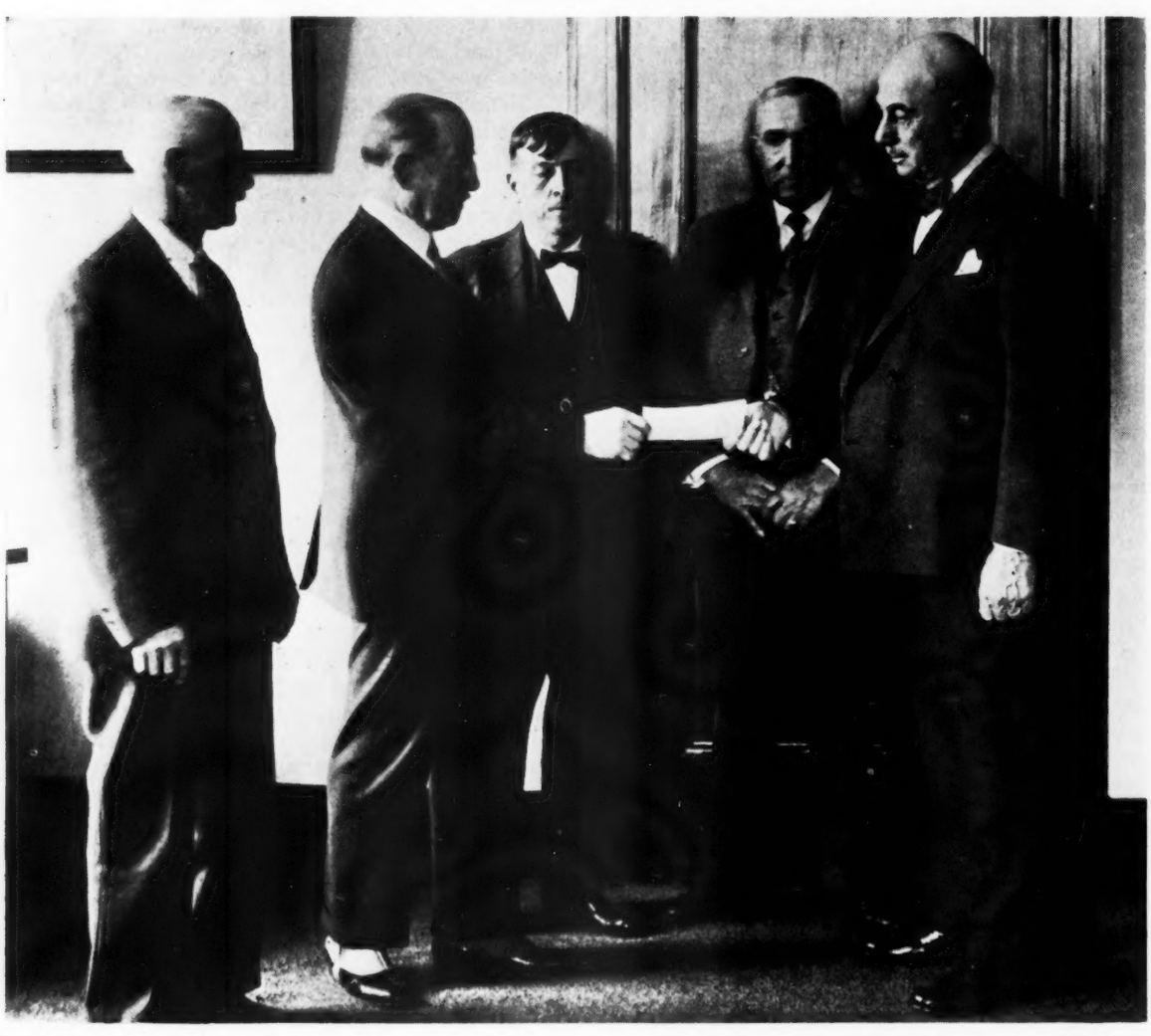
THE Sunday shut-down has again been abandoned. More than a year ago a few companies put it into effect wherever they could in Oklahoma. As it failed to become unanimous, those companies resumed the seven-day operation except for properties where production was settled and drainage was no great factor. Recently the Standard Oil Co. of New Jersey, responding to an appeal by the Federal Oil Conservation Board, reduced refinery operations the equivalent of one day each week and shut down field and pipe line operations on Sunday. Now the Humble Oil & Refining Co. and the Carter Oil Co. announce they have returned to Sunday operating because they were practically alone in the movement.

There are many who contend that this principle is correct and we may expect further attempts to put the industry on a six-day basis. E. B. Reeser, president of the American Petroleum Institute, would go a step farther. In a recent address he declared that "five days per week is all that any man should be permitted to perform." Mr. Reeser was thinking of distributing existing jobs to more people.

Advocacy of the Sunday shutdown by NATIONAL PETROLEUM NEWS in the past has been pitched on its efficacy as a stabilizing measure. It has argued that there is no virtue in working seven days a week to overproduce the market. It is admirably suited to those states where operators who would enter into restrictive agreements fear the embarrassment of anti-trust laws. Each such state has a "blue law" on its books ordering Sabbath observance.

The fact that the New Jersey subsidiaries have given up the attempt to inaugurate Sunday shutdown this year does not invalidate the idea, although it probably will be dormant for a long while.

50 Years Without a Strike or Major Litigation



THE photograph marks an interesting occasion for Imperial Oil, Ltd., important Canadian oil company. On the right, C. O. Stillman president of the company is accepting a check for $35,300 being handed him by A. MacCorkindale, manager of the company's marketing branch at Victoria, B. C., as chairman of an employe's committee. The fund represented by the check was voluntarily subscribed by employes, to commemorate 50 years of activity during which the company has never experienced a strike or been engaged in major litigation. It is to be the nucleus of a trust fund to be administered by the directors, the income from which is to be devoted to humanitarian purposes. Others in the photograph are Charles Wall, of Toronto, representing marketing, with 46 years' service with the company; James Ware, of Sarnia, representing manufacturing, 45 years' service and Matt Smith, of Petrolia, representing production, 46 years' service.

S.O. California Gives System to Public For Preventing Tanker Explosions

SAN FRANCISCO

STANDARD OIL CO. OF CALIFORNIA announces the dedication to public use of a system for preventing tanker explosions through the utilization of flue gases in place of air in storage tanks.

Gases from the boiler fires are injected into storage tanks as the ship is being unloaded, thus preventing air from getting into and forming a flammable mixture with the gasoline or crude oil vapors. The flue gases pass through a wash of cold salt water to bring the temperature down to that of the sea, and to remove any soot. Automatic valves prevent hot gases from passing into the tanks in case the wash should fail to operate.

The flue gas system is characterized by the Standard of California as being one of its most important developments in the fire protection field. Anyone engaged in construction or operation of tankers may obtain drawings or the design and installation of such a system at a cost of $50 for 50 detailed working and pattern drawings.

The following description of the system was issued by the Standard Oil Co. of California:

During the past few years a number of such tanker explosions have occurred, in some instances with serious loss of both life and property. Generally speaking they are the result of the accidental ignition of the highly explosive mixture of oil vapors and air formed when a volatile oil such as crude or gasoline is pumped out of a tank ship, and air flows into the tanks to take its place.

While Standard Oil of California's fleet has been fortunate enough never to have suffered such an explosion, the company has realized the danger under which tankers inherently operate, and several years ago company engineers started investigating methods by which the potential hazards could be eliminated.

Realizing that an explosion cannot occur unless the oxygen of the air is present to combine with the petroleum vapors, the simplest and most direct way of eliminating the hazard appeared to be some means of filling the tanks with some gas which contained little or no oxygen.

Fortunately, no special apparatus for the manufacture of such a gas is necessary on a steamship; for tremendous quantities of flue gas, from which the oxygen has been consumed by the boiler fires, are constantly passing up the stack. This is, of course, a waste product which, when properly cooled and washed makes an ideal inert gas for introduction into the vapor space of the cargo tanks. The accompanying sketch shows diagrammatically the way this plan has been put into effect on several Standard Oil ships.

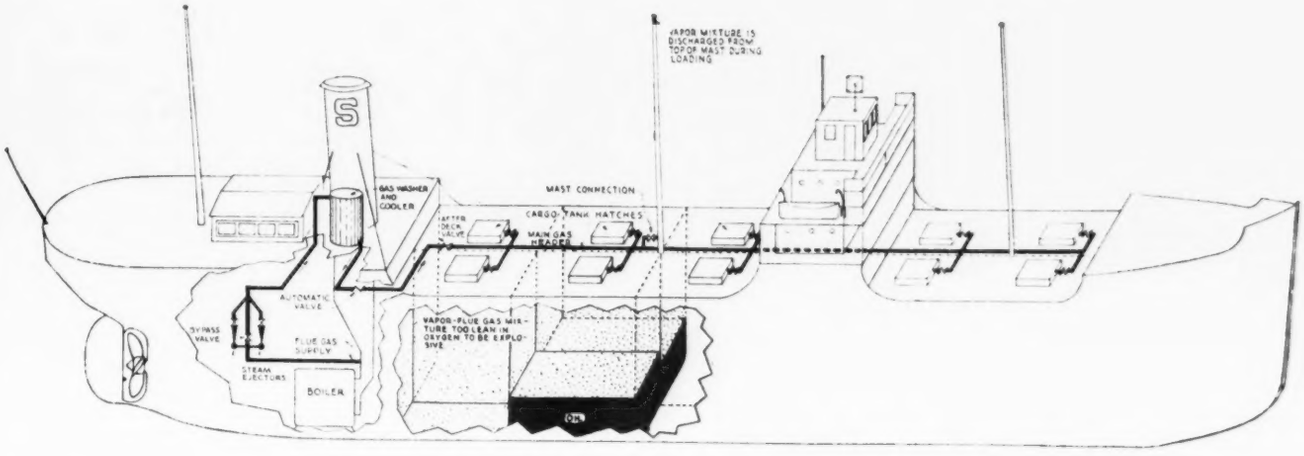
At first thought, this plan of putting gases from the boiler fires into a ship's tank might appear to be anything but a safeguard for the ship; but if the layout is examined it will be seen that, as the gases are withdrawn from the stack, they flow through a washer in which a deluge of cold salt water brings the temperature of the gas down to practically that of the sea and washes out any soot that it may carry.

As a still further safeguard, an automatic valve on the cooler outlet is held open by a steam piston against the pressure of heavy springs. Steam is supplied to the piston from the steam jet pumps used to pull the flue gas from the stack; should the steam supply fail, the valve closes instantly. A connection is also made in such a manner that even partial interruption of the cooling water supply will release the steam pressure and permit the valve to close. Thus, no hot gas can possibly find its way into the cargo tanks.

A flue gas system of the type described safeguards a tanker in three principal ways:

1)—By keeping oxygen from getting into the tanks when they are emptied, it insures that during the period of unloading and the return voyage empty, the tanker's compartments are so thoroughly protected that they could not be ignited even if somebody deliberately plunged a flame into them.

2)—During the period of loading, the vapors, instead of being pushed out through the "ullage holes" onto the deck as is the case in an ordinary tanker, can all be collected through the flue gas piping system and discharged, through the connection shown in the sketch, up and out the top of a hollow mast. This eliminates one of the most hazardous conditions of ordinary operation; for when a



The flue gas system for preventing tanker explosions, developed by the Standard Oil Co. of California and dedicated to public use. As air and vapors in the tank form a flammable mixture the flue gas is injected in place of air as the ship is being unloaded and a non-flammable mixture replaces the oil

tanker not equipped with such a system is loaded, a constant flow of highly combustible vapor is discharged onto the deck of the ship—where workmen must walk to and fro regulating valves, getting back and forth from quarters, etc.

3)—When it is desired to clean a tanker, flue gas can be blown into the bottom of the tanks through the cargo lines; and the mixture of residual petroleum vapors and flue gas discharged through the flue gas lines up the mast. By this process practically all of the petroleum vapor can be quickly swept out of the tanks; and then when the tanks are opened up to be swept out with fresh air by wind sails, there is no chance of passing through an explosive range as would be the case when fresh air flows into tanks containing straight petroleum vapors. Some of the worst tanker accidents have occurred during cleaning operations; flue gas equipped ships are effectively safeguarded against such accidents.

The first Standard Oil tanker to be equipped with this protective system was the S. S. "H. M. Storey" on which the system was put into commission in May, 1927. Six other tankers have since been similarly equipped.

Despite the mechanical difficulties inherent in any such new development, the systems on all these ships have functioned as planned better than 90 per cent of the time that they have been in service; and on the basis of this experience it is expected that future installations should give very close to 100 per cent performance.

In order that any person or firm operating tank ships may have the benefit of this effective form of protection, Standard Oil Co. is prepared to furnish without charge to anyone engaged in the construction or operation of oil tankers general drawings illustrating the design and installation of the different parts of such a system. A full set of approximately 50 detailed working and pattern drawings will be furnished for a cost charge of $50.

Kanotex Celebrates 25th Birthday

CLEVELAND, May 5.—The Kanotex Refining Co. of Arkansas City, Kan., celebrated its 25th birthday on April 30. The company is one of the oldest independent refiners in the Mid-Continent field.

The Kanotex was organized as the Superior Refining Co. at Longton, Kan., a few miles from Independence, on April 30, 1905. The name was changed to Kanotex in 1909, and the plant was moved to Caney, Kan., the following year.

In 1917 the plant was moved a unit at a time to Arkansas City. By this plan the plant was never entirely shut down during the transfer. The Kanotex plant has never been entirely shut down in its history except for a few days in 1923 when its site was under water.

The first plant operated by the company had a capacity of 300 barrels per day. Since the plant has been at Arkansas City its capacity has been increased from 2000 to 15,000 barrels per day. It has been kept up to modern standards by frequent building and remodeling programs. It now has three cracking units.

C. M. Boggs, president of Kanotex, joined the organization in December, 1909. He started as a driller in the field near Longton. He became president a little over a year ago on the death of John McE. Ames who had been president for many years and financially interested in the project since its organization.

The Kanotex sells its products to jobbers. It has no distributing system of its own.

Diphenyl Proves Good Heating Medium

CLEVELAND, May 5.—Information on the physical properties of diphenyl ($C_6H_5 . C_6H_5$) recently produced commercially by the Federal Phosphorus Co. Division of The Swann Corp., is now ready for distribution. About a year ago this product was known only in the laboratory and the price per pound was $40.00. Today, with the data on its physical properties available, it is quoted at 30 cents per pound in carload lots.

The Federal Phosphorus Co. began work on the manufacture of diphenyl in order to supply it to a large oil refining company which had found that diphenyl was the best suited material to use as a heat transfer medium in a distillation process covering the preparation of lubricating oils.

As an indirect heating medium, handled in much the same way as steam, diphenyl holds promise because of its high boiling point and low vapor pressure at elevated temperatures. Its advantages in connection with various evaporation distillation digestion, drying and other operations involved in the oil, chemical, soap, paint and varnish, enameling and many other industries where high temperatures are required are now being actively investigated. It will also be found to offer advantages as a medium for reheating steam in electric power stations, thereby eliminating the necessity of the presently employed reheat boiler.

Commercial diphenyl has a melting point at atmospheric pressure of 157 F.; boiling point of 492 F.; and a critical temperature of 980 F. It is known to be stable at 850 F., and a report recently received states that it has operated at 900 F. for 500 hours with no evidence of decomposition or attacking the metal (steel and cast iron) used in the construction of the equipment. A typical point in the physical property table gives the following:

Temperature 700 F.
Vapor Pressure 95.4 pounds gage.
Heat of liquid 301.5 B.t.u.
Latent heat 99.0 B. t.u.
Density of liquid 45.4 pounds per cubic foot.
Density of vapor 1.7 pounds per cubic foot.

Tests are now under way to determine accurately its limiting temperature.

A large amount of intensive investigation was carried out by different scientists in the effort to develop the present economical method of manufacture of diphenyl. Special acknowledgment is given for the contributions of the following:

Professor J. M. Cork and D. A. Wilbur, of the University of Michigan, for work done on vapor pressure curve, latent heat and densities of both the vapor and liquid.

Laboratory of Applied Chemistry, Massachusetts Institute of Technology, for work done on specific heat of the liquid. This work was done by L. W. Cummings, F. W. Stones and M. A. Volante under the direction of H. O. Forrest and Elmer W. Brugmann.

R. O. Fowler, University of Michigan, for work on the specific heat of the liquid.

Dr. John Chipman, Georgia School of Technology, for work in connection with vapor pressures and vapor densities.

Dr. W. L. McCabe, University of Michigan, and associates, for work done in collecting the data and preparing them for publication.

Professor W. L. Badger, Swenson Evaporator Co., for his cooperation in the preparation of the tables.

Copies of the data on the physical properties of diphenyl may be obtained by writing the Federal Phosphorus Co., 420 Lexington Ave., New York.

W. P. R. A. Brings Statistics to Date

TULSA, May 3.—A summary of statistics of importance to refiners, such as the Western Petroleum Refiners Association put out last September has been compiled by that association again, dated April 30.

In this booklet are included summaries of production, stocks and shipments of all oils, by years and districts back to 1918, and by months for the past three years.

It also shows the capacities of operating refineries by districts, prices of some crudes and refined products, oil and gas well completions, California crude shipments through the Panama Canal, natural gasoline, benzol and cracked gasoline statistics, and other similar information of interest to refiners.

To Consider Standardization Of Refinery Equipment

NEW YORK, May 1

POSSIBILITIES of standardization of refinery equipment are to be investigated by the American Petroleum Institute, it was decided at a meeting of the division of refining held at institute headquarters May 1. A committee was appointed to consider the project and report back.

Henry Thomas, of the Sun Oil Co., Philadelphia, will be chairman of the standardization committee. Dr. R. P. Anderson, institute technologist, will act as secretary. Other members of the committee are Mark W. Daw, of the Shell Oil Co., San Francisco; C. H. Haupt, of the Standard Oil Development Co., Elizabeth, N. J.; K. V. King, of the Standard Oil Co. of California, San Francisco; W. D. Kinsell, of the Pure Oil Co., Chicago; F. P. Risdon, of The Texas Co., New York; and Walter Samans of the Atlantic Refining Co., Philadelphia.

General opinion at the meeting of the refining division was that the new project of standardization of refining equipment will not have quite as wide an application as in the producing industry. In that branch the A. P. I. has been working with marked success for a number of years.

It was the opinion that standardization in the refinery probably will be limited largely to auxiliary equipment. Crude oils vary so widely that it probably would be undesirable to attempt any strict schedule of standardization of distillation equipment such as stills and towers.

The field of standardization in the refinery could well embrace fittings, piping, control apparatus and the like. Standard alloys may be developed to resist various degrees of corrosive action, for example. Standardization of pipe, valves and fittings for high pressure service may also be a field for investigation.

In preparation for the annual institute meeting next November a program committee was appointed at the division meeting. Dr. T. G. Delbridge of the Atlantic Refining Co., is chairman of the committee. Dr. Anderson will act as secretary of this committee also. Other members are H. W. Camp, Empire Oil & Refining Co.; R. A. Halloran, Standard Oil Co. of California; R. E. Haylett, Union Oil Co. of California; E. W. Isom, Sinclair Refining Co.; N. E. Loomis, Standard Oil Development Co.; K. G. Mackenzie, The Texas Co.; Walter Miller, Continental Oil Co.; and R. E. Wilson, Standard Oil Co. of Indiana.

Decision was reached by the institute directors at a meeting held the same day to enlarge the scope of the weekly report of refining operations. It was voted to include data on the output of cracked gasoline by districts each week. This will give an added check on the scope of refining operations.

It was also voted to seek more accurate figures on gasoline stocks east of the Rocky Mountains. An effort will be made to include gasoline in storage at bulk terminals as well as at refineries. At the present time the California figures include terminal storage but eastern figures are restricted to refinery stocks held at plants themselves.

A.P.I. Approves Economics Committee Report

NEW YORK, May 1.—Resolutions recommending that our industry give careful consideration to the report of the volunteer committee on petroleum economics were adopted by directors of the American Petroleum Institute at their regular meeting here May 1. The resolutions commended the Federal Oil Conservation Board for its constructive action in requesting the committee to make its supply and demand analysis.

Following are the resolutions as adopted:

"RESOLVED: That the Board of Directors of the American Petroleum Institute commends the Federal Oil Conservation Board for its constructive action in appointing, on March 10, 1930, a Volunteer Committee on Petroleum Economics, and in requesting such committee to make an analysis of the status of petroleum demand and to express an opinion on the following points:

"1. What is the anticipated consumption of refined products?

"2. What production of crude is necessary to meet efficiently that demand?

"3. Can this supply be allocated to the major producing districts separately?; and

"RESOLVED: That the board compliments said committee upon the admirable report which it filed with the Federal Oil Conservation Board on March 25, 1930, and announced by said board on April 14, 1930 with the comment that "the experts of the Federal Oil Conservation Board inform us that these estimates are amply provided for by present developments"; and

"BE IT FURTHER RESOLVED: That the Board of Directors of the Institute commends this report, printed in full in Institute Bulletin No. 25, dated April 27, 1930, to the petroleum industry with the suggestion that it receive in the several oil producing states the most careful consideration."

The directors voted to urge that individual oil companies lend their financial support to the coming meeting of the International Good Roads Conference.

A. P. I. Unitization Committee Meets

NEW YORK, May 1.—Copies of the newly published Handbook on Unitization were distributed to members of the American Petroleum Institute committee on unitization at a meeting at institute headquarters here May. 1. W. N. Davis, president of the Mid-Continent Oil & Gas Association, who was instrumental in having the handbook compiled by that association and who is chairman of the institute committee, brought the books direct from the printers.

The institute committee spent several hours in a general discussion of unitization during which no important differences of opinion developed among the 25 executives present. Satisfactory progress is being made through the industry as more and more new projects are being unitized.

Resolutions were proposed pledging committee members to a policy of supporting unitization. Copies of the resolution are to be sent to all members of the committee for comment.

Favor Three Year Plan To Curb Production

By Telegraph

LOS ANGELES, May 6.—It is reported here that members of the California Oil Research Committee representing major companies favor a three year curtailment program for Pacific Coast crude production during which time crude stocks would be reduced to approximately the 1928 average. Some independent members are reported to favor greater reduction in daily crude output although a majority is reported favoring continuance of present allowable production of 610,000 barrels per day.

CHICAGO—James C. Grant, formerly with the United States Advertising Agency, Toledo, and the Roche Advertising Co., Chicago, has joined the Chicago office of Rogers-Gano Advertising Agency of Illinois.

Review of Late Production News

U. S. production of crude oil changed only 5100 barrels daily average last week. The minor increase brought output to 2,595,200 barrels per day according to the American Petroleum Institute.

Crude oil imports declined 16,855 barrels, to 183,430 barrels daily average. Total new crude supply was 2,778,630 barrels, a decrease of 11,755 barrels under the previous week.

Oklahoma output declined 3250 barrels while California gained 2300 barrels. The largest changes were in Oklahoma City and Gray County, which gained over 7000 barrels each on daily average. East Earlsboro declined 5350 barrels. Sasakwa declined 3150 barrels and Zwolle 2150 barrels.

Current production in this country by pools is found on page 105.

Oklahoma-Kansas

SPRING rains in the Mid-Continent may have slowed up the drilling operations a bit but it had no effect on the boys in the office, for they turned out an unusually large number of first reports. Wells that had extended production the previous week were surrounded with offsets and one small boom is under way in Pottawatomie county, Okla., near the old Asher pool.

Oklahoma City was stretched one half mile to the west and first reports on both the north and south ends of the pool indicate that it won't be long before it is pushed out in those directions. There were 26 first reports in this field and most of them were in the town lot area bordering the city limits on the south.

In Kansas, the Raymond Siliceous lime pool of Rice county, was extended one quarter of a mile to the east by a good producer and several new locations were made about the pool. The Ritz pool of McPherson county took new potentials and raised the proration limit from 50 barrels per well, to 50 per cent of the potential. This will give the pool an approximate daily average production of 5000 barrels.

California

ALTHOUGH the California oil industry research committee met May 2 to discuss ways and means of reducing crude production to a theoretical figure of 550,000 barrels per day, no satisfactory results were obtained and another meeting has been called for May 8.

Actual enforcement of the California gas conservation law has been held in abeyance by continued opposition on the part of a number of Santa Fe Springs operators and State officials through their legal counsel James S. Bennett are bending every effort toward bringing the matter before the state Supreme Court.

Superior Judge Crawford, hearing the state's plea for an injunction against Signal Hill operators, has set the date for continuance of the hearing until after a definite decision has been reached at Santa Fe Springs.

Several production tests to be made during the coming week in important areas are expected to either determine the deep sand productiveness of the districts or to extend the existing producing horizons.

With the completion of Union Oil Co.'s Alexander 24 in the old Nordstrom zone at Santa Fe Springs for 2230 barrels of oil from a depth of 5125 feet, other operators are preparing to test wells in this sand that was passed up during the rush to reach the lower Clark and O'Connell sands.

Wyoming, Montana

A LICENSE to export waste gas from Alberta has recently been granted by the Dominion government to the Range Oil & Gas Co. This is the first to be given under a new policy in Canada and will mean that Alberta gas will be available to Montana, Dakota, and possibly Minnesota markets.

Idaho public utilities commission has given authority to the Uinta Pipe Line Co. to lay a gas line extension from Ogden, Utah, to southeastern Idaho towns to supply them with their fuel requirements. The gas is from wells in southwestern Wyoming.

Producers & Refiners will drill a rotary deep test on its Muskrat dome structure, 70 miles west of Casper, in an attempt to get through the big gas sand to oil production.

Mahoney Dome, Wyoming, joint deep test of the Producers & Refiners and the Midwest Refining company has a hole full of oil in the Tensleep sand.

Prairie Oil & Gas Co. has found a new sand at its deep test in Bair camp, Little Lost Soldier field. Production has been cemented off and test is drilling on to the Tensleep. Oil was found in what is believed to be the red beds-Embar contact.

Franchise to furnish Craig, Colo., with gas has been granted to Arnold A. Odlum, Denver attorney.

Texas, New Mexico, Louisiana

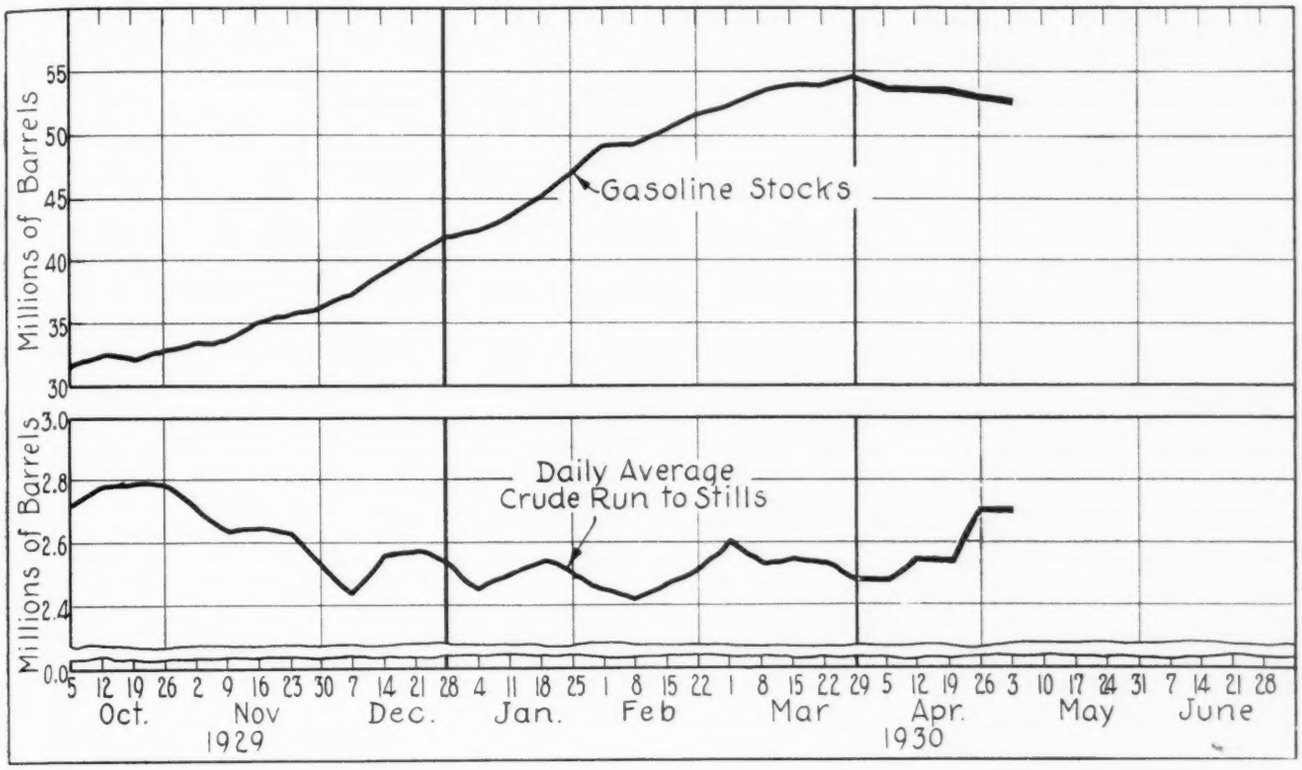
DEVELOPMENTS under way in four areas of Texas and New Mexico are gradually increasing daily average production, or indicates that greater exploitation is certain later in the year. The Van field of East Texas is now exploited above 20,000 barrels daily from 27 choked wells and the Darst Creek field of the Luling fault zone was increased to 23,830 barrels daily prorated production, May 1, as compared with 15,000 barrels previously.

In Ector county, West Texas, 21 wells were curtailed to approximately 12,000 barrels daily. Hobbs district production of Lea county, New Mexico, will be increased when the Humble Pipe Line Co., and the Atlantic Pipe Line Co. complete their West Texas systems into the area about June 1.

In Williamson county, central south Texas, a well northwest of the E. L. Chapman discovery, on an inferred serpentine plug, made at the rate of 5000 barrels, initial production, at the 1600-foot level.

North Louisiana completions were of local importance only, but a number of deep tests figure in the locations column for Bossier, De Soto and Claiborne parishes. Their outcome will be watched as showing what to expect from the Lower Cretaceous horizons, from which nominal production has been yielded by Trinity beds.

U. S. Crude Runs and Gasoline Stocks as Reported Weekly by A. P. I.



Crude Runs at U. S. Refineries Drop

By Telegraph
NEW YORK, May 6

CRUDE runs were cut 117,700 barrels daily average at U. S. refineries during the week ended May 3 according to reports gathered by the American Petroleum Institute. The reduction was general throughout the country.

While the crude cut was of important proportions it did not quite equal the increase reported in the week ended April 26. That week refiners increased their runs 147,300 barrels when gasoline demand took a sudden upward spurt. Runs for the past week were at the rate of 73.4 per cent of total capacity as compared with 76.7 per cent the previous week.

Refiners in Texas reported the largest cut in runs. In that state throughput was down 51,400 barrels daily average from 84.4 per cent of capacity to 77.2 per cent. East Coast refiners cut their runs 21,700 barrels from 85.4 to 81.9 per cent of capacity.

An error in gasoline stocks on the east coast was made in the April 26 report by one refiner. The report as issued a week ago showed a reduction of 265,000 barrels in gasoline stocks. As a matter of fact the stocks were cut only 16,000 barrels.

In the week ended May 3 gasoline stocks rose generally throughout the country. In only two districts were reductions shown. Appalachian refiners showed a cut in stocks of 64,000 barrels and Indiana-Illinois a cut of 130,000 barrels. These were more than overbalanced by increases elsewhere so that U. S. stocks rose 265,000 barrels to 53,826,000 barrels.

Fuel oil stocks were cut 670,000 barrels to 136,015,000 barrels. Texas refiners led in reducing fuel reserves.

Current Refinery Operations

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		Stocks (Thousands of Barrels)			
		May 3	Apr. 26	May 3	Apr. 26	Gasoline May 3	Gasoline Apr. 26	Gas & Fuel Oil May 3	Gas & Fuel Oil Apr. 26
East Coast	100.0	495,800	517,500	81.9	85.4	9,621	*9,492	6,679	6,466
Appalachian	91.0	88,400	91,700	75.8	78.6	1,829	1,893	762	773
Ind.-Ill.-Ky	99.5	323,600	333,000	86.1	88.6	8,589	8,719	3,626	3,492
Okla.-Kans.-Mo	89.1	301,800	319,900	73.3	77.7	4,399	4,366	4,123	4,123
Texas	90.8	552,800	604,200	77.2	84.4	8,025	7,694	9,624	10,010
La.-Ark	96.8	176,100	176,100	63.8	67.2	2,664	2,620	1,942	2,120
Rocky Mountain	93.6	56,900	60,700	40.9	43.6	2,817	2,814	1,097	1,077
California	99.3	595,500	596,500	66.8	66.9	15,882	15,863	108,162	108,624
Total	95.6	2,581,900	2,699,600	73.4	76.7	53,826	*53,561	136,015	136,685
Texas (Gulf Coast)	100.0	423,800	456,600	80.5	86.7	6,948	6,640	6,984	7,282
La. (Gulf Coast)	100.0	109,300	108,600	74.1	73.6	2,282	2,253	1,056	1,220

*Revised.

Oil-Electric Locomotives Show Large Savings in Operating Costs

By Arch L. Foster
N. P. N. STAFF WRITER

APPROXIMATELY 100 standard gauge Diesel-electric locomotives are now in service or on order for railroads and industrial concerns in the United States and Canada, according to a report by the committee on Diesel locomotives of the International Railway Fuel Association at its twenty-second annual meeting at Chicago, May 6-9. These engines are used mainly in switching service, and in that work they have reduced fuel costs, operated at low maintenance costs, and have proved to be reliable.

Most of these engines are of 300 to 600 horsepower, though a few have been built of greater power. Baldwin Locomotive works is using two such engines, each of 1000 horsepower, one equipped with a Knudsen Diesel, put into operation in 1925, the other with a Krupp engine, starting operation in May, 1929. The largest listed in the report is the 2260 horsepower engine built for the Canadian National Railway and equipped with a Westinghouse Diesel.

Twenty-six concerns are now using one or more Diesel locomotives, and according to the report their use has been quite satisfactory. Not counting the 37 O. E. Battery locomotives used by the New York Central, The American Rolling Mill Co. employs the largest number, seven; the Illinois Central is second with six engines, and the Erie Railroad has five in use at the time of making the report.

Besides the makers of Diesels mentioned above, the locomotives are equipped with engines made by Ingersoll-Rand, and McIntosh-Seymour, the former supplying the greater number. Baldwin's made a 0-4-4-0 type Diesel-electric in 1929, No. 61,000, in which was installed a 1000 horsepower Krupp Diesel, with oil-cooled pistons and heads. The jacket water and cooling oil are cooled in radiators by means of electrically driven fans, and the engine is started with compressed air furnished by a compressor attached to the engine.

The main points in the design of more recent locomotives now being built are illustrated by two under construction by the Ingersoll-Rand Co., one for passenger and the other for freight service. These engines are each of 1600 horsepower, equipped with two 825 brake horsepower oil engines, each engine direct connected to a 525 kilowatt generator. The two engines furnish power to four G. E.-286 traction motors mounted on the trucks of the passenger locomotive, the freight locomotive employing six motors, also mounted on the trucks.

In comparing costs of fuel, and operating costs, the Baldwin No. 61,000 referred to previously was compared with a consolidated steam locomotive weighing 251,000 pounds, with a tractive effort of 49,000 pounds. The fuel and lubricant consumption, and cars handled, were as follows:

	Diesel-Elec.	Loco.
Fuel Oil—gals. ..	9.40	.....
Coal, lbs.	.....	700
Lubricants, gals...	0.20	0.05
Cars handled	21.10	20.10

Other similar tests resulted in essentially the same comparative consumptions according to further data given in the report.

In order to give a more complete picture of the relative costs in operating locomotives of these two types the accompanying table taken from the report is given in full.

As will be seen in the tables the difference in cost is heavily in favor of the Diesel-electric type of locomotive, being about one third less in plant B and nearly 50 per cent less in plant A. No figures for relative first cost of the engines is given, however, so that comparison cannot here be made on that basis.

In still another test reported the average hourly operating cost of a 300 horsepower Diesel-electric locomotive during 1929 was $2.806, while that for a steam locomotive of comparable size on similar work was $4.432, a difference in favor of the oil-electric of $1.626, or more than 50 per cent.

The report expressed the opinion that oil-electric locomotives are not necessarily confined to the smaller sizes, at all, but that single units of 2000 horsepower or more are a possibility, and that any desired number of such units may be operated in multiple.

Referring to developments in Diesel-electrics in Europe, the report goes on to state: "The most interesting development abroad is represented by the German Diesel locomotive with air transmission, built by the Esslingen Locomotive Works, and now undergoing tests on the German State Railways. This is a 4-6-4 locomotive with a 1200 horsepower Diesel engine driving an air compressor, the compressed air being admitted to ordinary locomotive cylinders in the usual way. The exhaust of the engine is used to heat the air before admitting it into the cylinders, and thus part of the heat which is otherwise wasted with

The tables, under the headings Plant "A" and Plant "B" show operating costs of 300 horsepower Diesel locomotives compared with steam locomotives in steel mill service.

PLANT A

Operating cost in dollars and cents per locomotive-hour. Date, August 1st, 1928, to July 31st, 1929. Oil-electric locomotives assigned, 4.

	Oil-Electric	Steam
1. Power		
Fuel	$.2311	$1.3081
Water	negligible	.0247
Lubrication & Waste	.0581	.0393
Steam Coal Tower	.....	.0685
2. Labor		
Enginemen	.8937	1.7124
3. Maintenance		
Repairs, Engine House Exp., Loco. supplies	1.78	2.7118
4. Capital Charges		
General Works Exp.	.4186	.4540
5. Miscellaneous		
Car. & Loco. Rentals	.1070	.0458
Safety & Accident	.1150	.1430
Engineering & Drafting	.0250	.0136
Total cost of Operation per Loco-Hour	$3.6285	$6.5212
Saving Oil-Electric per Loco.-Hour	$2.8927	

PLANT B

Operating cost in dollars and cents per locomotive-hour. Date: January 1st to December 31st, 1928. Oil-electric locomotives, assigned, 4.

	Oil-Electric	Steam
1. Power		
Fuel	$.365	$1.210
Water	negligible	
Lubrication	Included in supplies	
Loco. Supplies	.080	.020
Engine House	.205	.795
2. Labor		
Enginemen, Ground men	1.660	3.310
3. Maintenance		
Repairs	.560	1.070
4. Capital Charges		
Interest	.505	.115
Depreciation	.815	.115
Superintendence	.895	1.065
Total Cost of Operation per Loco.-Hour	$5.085	$7.700
Saving Oil-Electric per Loco.-Hour	$2.615	

the exhaust is recovered. Besides, the heating of the air is desirable because it eliminates the unduly low temperature as a result of the expansion and rapid fall in the air temperature.

The prime mover is a 1200-brake-horsepower Diesel engine of the conventional M. A. N. design, directly coupled to a high speed compressor. Very small clearance is necessary for a good volumetric efficiency, and before placing it in the locomotive it was thoroughly tested at the Esslingen Works on a test bed.

Experiments were also made in order to determine if air could be used without fear of explosions in the compressors or locomotive cylinders, which might be caused by oil residues in heated compressed air.

The compressed air at a pressure of about 100 pounds per square inch, leaving the heater with a temperature of 600 to 650 F., enters the cylinders, which have a diameter of about 28 inches, through an ordinary throttle and the usual Walschaert gear. The cutoffs can be made as low as 15 per cent. The principal dimensions are as follows:

Engine power	1200 b.h.p.
Revolutions per minute	450
Working air pressure	100 lb. per sq. in.
Tractive power at rail	25,000 lb.
Number of cylinders of Diesel engine	6
Diameter of Diesel cylinders	17 11/16"
Stroke of Diesel cylinders	16½"
Diameter of compressor cylinders	25"
Stroke of compressor cylinders	13¾"
Diameter of locomotive cylinders	28"
Stroke of locomotive cylinders	25⅝"
Diameter of driving wheels	63"
Speed limit	50 miles per hour

The report outlines developments in various types of locomotives, including four 650-volt direct current generators now being tested in Denmark. In these the engine is started by using the generator as a motor driven by current from a 33-cell storage battery with a capacity of discharge of 500 amperes per hour, instead of starting by compressed air. Some prime movers are equipped with double-gear transmission instead of placing the driving motors directly on the trucks. Automatic electrical control of oil-electrics is being developed, and it is implied that this will be the probable trend in future design, at least in this country.

It seems to be the belief of the members of the committee that all indications point to greatly increased use of this type of prime mover. Its efficiency for use in regular road service is being determined by several interested organizations, and, while the data are not yet complete and experience may dictate many changes before the best design for regular service is accomplished, this would appear to be only a matter of time, judging by the amount of attention that is being given the subject, both here and abroad.

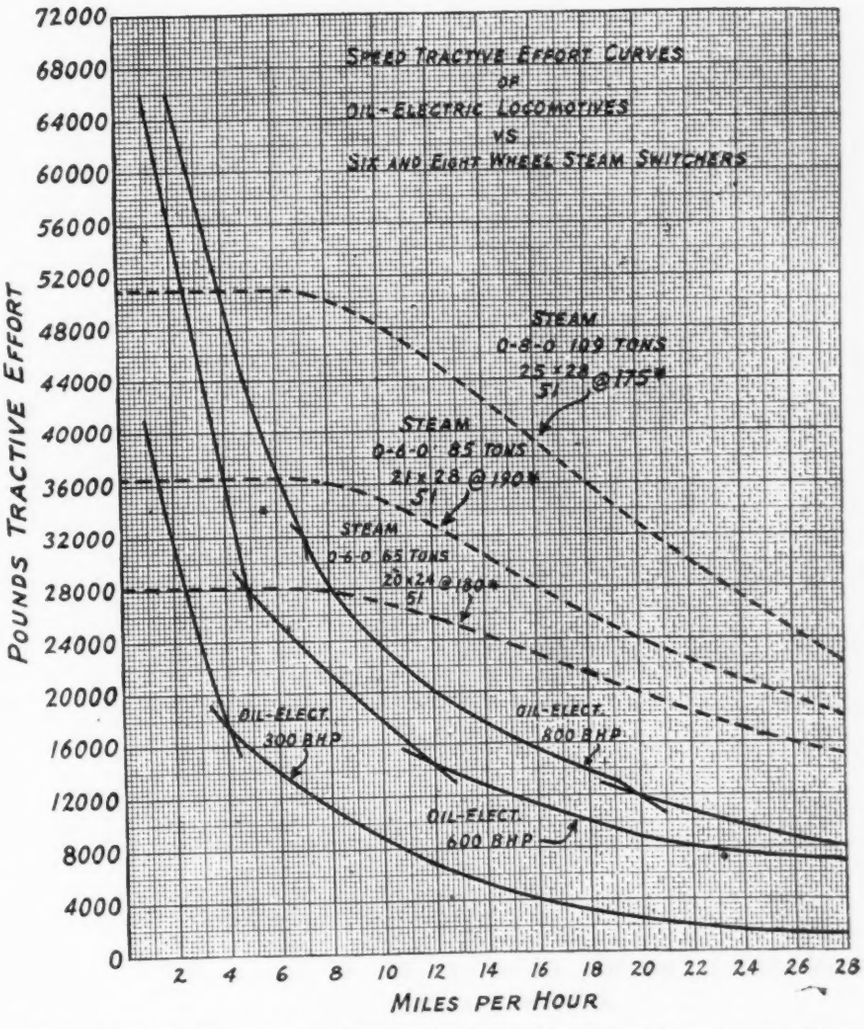


Fig. 1—Tractive effort speed characteristics of Diesel-electric and steam locomotives compared

Gas Convention Opens At New Orleans

By Telegraph

NEW ORLEANS, May 6.—The transportation of natural gas and its distribution to the consumer are the problems being chiefly discussed previous to the opening of the annual convention of the natural gas division of the American Gas Association at New Orleans. Incident to the above the handling of gas wells both from a drilling and producing standpoint are to receive the major portion of the attention during the technical sessions which open Tuesday, May 6, at the Roosevelt Hotel.

Of the technical and research committees reporting on the initial day of the convention both the gas measurement by orifice meter and the pipeline flow committees were able to announce that their complete reports would be ready in the near future. These committees were headed respectively by F. M. Towl, president, and H. D. Hancock of the Cities Service Co. of New York.

The sub-committee on gas well delivery capacities headed by N. C. McGowan of the Louisiana Oil & Fuel Co., at Shreveport, is postponing final report until next year. Over 500 delegates were registered before the technical sessions began.

Monday was occupied with interesting side trips in the picturesque city, a boat excursion on the Mississippi with a ball as the day's climax.

L. R. Holmes Transferred To New York

By Telegraph

NEW YORK, May 6.—L. R. Holmes was made manager of the refining department of The Texas Co. May 1. He will transfer his headquarters from Los Angeles, to New York as a result of the change. Mr. Holmes has been vice president of The Texas Co. of California. F. T. Manley is vice-president of The Texas Co. in charge of refining.

A one-stop station and office of the Staebler Oil Co., Ann Arbor, Mich. This station sells all its goods and services through every retail outlet the company operates in Ann Arbor

Making Gasoline Stations Feeders For Services of One-Stops

By E. L. Barringer
N. P. N. STAFF WRITER

ANN ARBOR, Mich.

THE Staebler Oil Co. has keyed its nine retail outlets in Ann Arbor into a department store plan of merchandising, with seven regular service stations feeding business to two one-stop stations.

Advantages of one-stop service are offered Staebler's customers in this city of 30,000 population without the overhead of stocking the merchandise and services in nine different outlets. From the view point of the customer, he has a one-stop station right in his own neighborhood, however.

"A department store is keyed so the various departments cooperate in supplying the needs of the customer," said Paul Kempf, secretary of the company, explaining the company's merchandising method.

"The same plan was adopted to our retail stores. Our company has a complete line of merchandise and services to offer the automobile owner, commonly classified as one-stop service. There are Dixie gasoline and motor oils, Mobiloil and Quaker State motor oils, and Firestone tires and batteries. We lubricate and wash automobiles. Our company has nine retail stores scattered over the city for the convenience of the customer.

"Every store has the potential merchandise and service of the company to offer at that location. A station may have only gasoline and motor oil on the ground, but the rest of the line is available quickly if the customer wants to buy. All of our stations cooperate, just as the divisions of a department store do, to serve the customer with his wants if we can supply them."

While the Staebler company has been organizing its merchandising efforts with the department store plan in mind it has arranged its sales force so the first attendant to come in contact with the customer manages all the sales.

Take the case of a customer driving into a station to buy gasoline. The attendant notices the spare tire is flat, and suggests a repair job. A work ticket is filled out by the attendant and he calls the one-stop station to have a service truck deliver the tire. If the customer desires he may wait at the station or return later to receive his tire. But the customer deals only with the one attendant, although two stations have been involved in the sale.

Another case would be a man driving into a station for gasoline on his way to the office. If he is open to the attendant's suggestion for a car wash and lubrication the attendant makes out the ticket. The driver could go to his office, the service car would get the auto and return it when asked for with all the services done. The attendant handled the sale, and directed the one-stop station to get the car and deliver it.

To help the stations sell the merchandise of all departments signs have been tacked to the window for battery sales, and a small stock of popular sized tires will be placed at all stations. The tires will be sold, and the rack furthermore will be a suggestion that the station sells more than gasoline and motor oil. Car washing and lubrication services are sold by solicitation of the customer in the station.

The solicitation selling is not done blindly, or with the idea of pushing some merchandise or service. Attendants are trained to notice worn fan belts, dead electric light bulbs, flat

tires, and the need of a car wash or lubrication.

"We impress our men with the idea of playing the role of banker to the customer," said Mr. Kempf. "The customer drives into the station with an investment that ranges from several hundred dollars up. The attendant's job is to serve that customer with what he asks for, then to suggest other merchandise or service if it is needed.

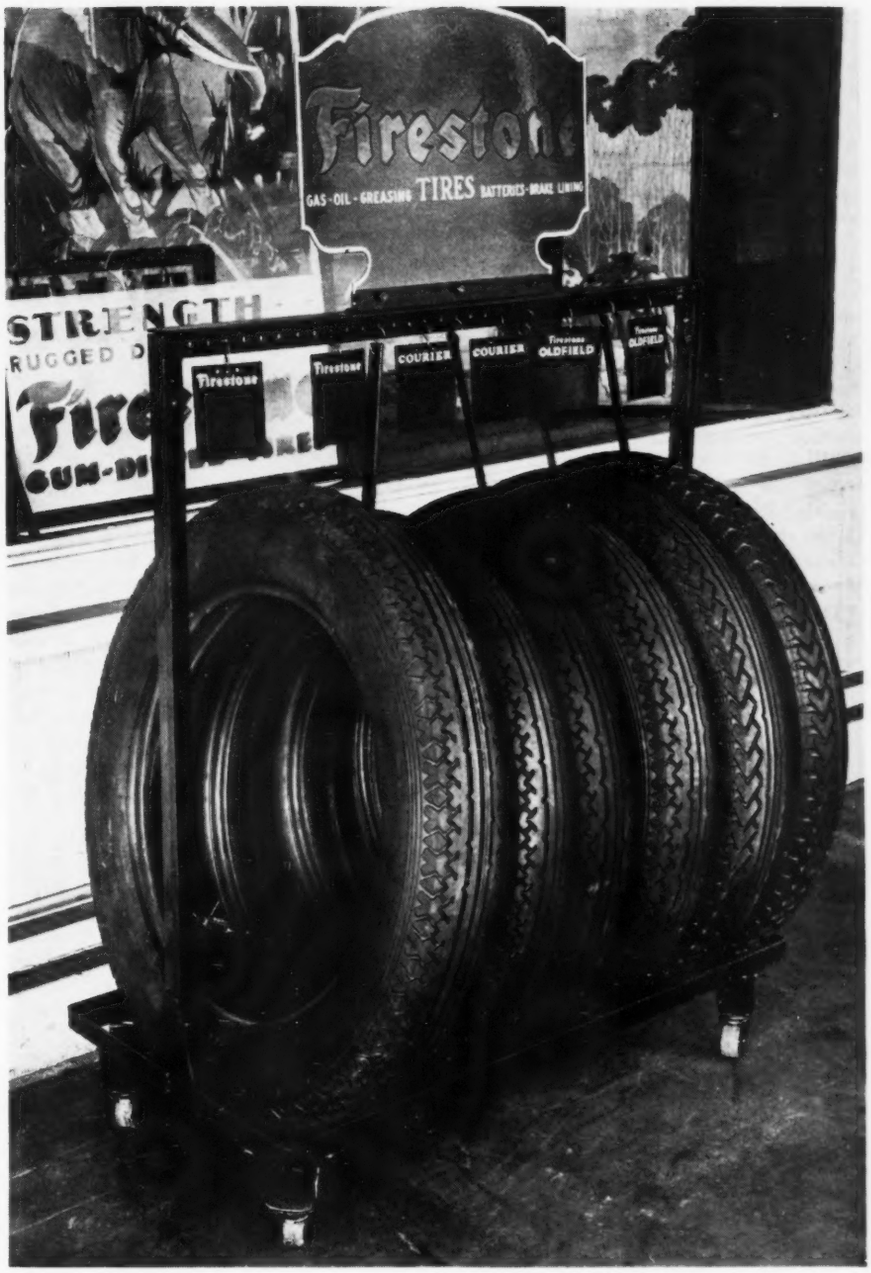
"The attendant is not to push some item for the sake of moving it. It is a decent gesture to call the customer's attention to the needs of his car. Such service helps the customer protect his investment. We like that idea of the attendant being a banker for the customer's investment, helping him protect it, and we hammer away on it."

The service of moving the customer's auto to the one-stop stations from regular stations is in charge of one man. If drivers are needed he picks up men from stations that can spare them. He has a service truck that is used for road calls on tire changing and for emergency gasoline deliveries to stranded automobiles.

The employe in charge of moving autos from the stations fits into the company's "Preferred Service" plan, and calls for and delivers these cars.

"Preferred Service" is the Staebler company's merchandising plan to help the customer keep his auto fit—through regular lubrication and car washing, and inspection of the tires and battery.

Membership in any club or organization is not prerequisite for "Pre-



Standard tire rack at service stations of the Staebler Oil Co., in Ann Arbor, Mich. Six tires are kept in stock at all times; additional tires, or other sizes, may be obtained quickly from one of the one-stop stations stocking the complete line

A service station of the Staebler Oil Co., in Ann Arbor, Mich., stocking the usual station merchandise and services yet with the potential facilities of a complete one-stop station. The attendants at these stations sell the one-stop station goods to the customer, and any transfer of merchandise is done with a service truck

ferred Service," nor are there any overhead charges. The customer pays the established rate for the work done on his car.

The customer may avail himself of this service and the company will keep a check on the car on the services mentioned above. If the customer desires the work will be done at definite times during the month.

The "Preferred Service" plan has found ready acceptance, for instance, with families where the husband travels. The service is a convenience as the company calls for and delivers the car to the home, and services the car as needed. Especially in winter is the service appreciated by these families as a check against freezing.

Another customer using this service is a lady with five autos in her fleet. About the first of each month the company sends up five drivers and has a parade to the station.

The company has protected itself in its car calling and delivery service through a blank insurance policy covering contingencies while the auto is in the driver's hands.

"Preferred Service" has been a means of regulating traffic on the three lubrication lifts at the main one-stop station. A customer will be granted definite time, at stated intervals, or appointments may be made from day to day.

The service is sold through direct mail letters and follow-up cards. Four times a year a letter is sent to customers, explaining what the service offers, its advantages to the car owner, and inviting any criticism of the company.

"Preferred Service" customers are handled at the two one-stop stations. One of these stations, also the company's office building, has three lifts for lubrication, battery sales and repairing, tire sales and repairing, and an accessory department, and gasoline, motor oil, and alcohol in winter. The other one-stop station has gasoline, motor oil, lubrication, tire sales, and car washing.

"The success of our merchandising system depends upon the men," said Mr. Kempf. "We want good attendants and five of our men have been with us for 12 years and many have been on the pay roll for three or four years.

"The attendants are paid good salaries, and we split the premiums on life insurance policies.

"One supervisor is employed for the nine stations. His main job is to keep the men 'out of the rut.' It is easy for a man to get discouraged, when sales effort lags, but our supervisor watches these signs and gets the men back into good spirits. The rest of his job is to help in selling and to check the stations for cleanliness. Our motto is 'cleanliness next to Godliness.'"

In keeping tab on the amount of work sent to the one-stop stations by the outlying stations work tickets in different colors are used. There are seven colors, one for each station, so the office can sort quickly by stations.

All station locations of the Staebler Oil Co. are owned in fee. Years ago when J. Fred Staebler, president of the company, went into the oil business with his first bulk plant he determined on the policy of owning his own ground. Some of the sites were large enough for the erection of store buildings also, so the rentals today at some stations carry a large part of the overhead load.

E. W. Staebler, mayor of Ann Arbor, is vice-president of the company, and Neil Staebler is treasurer.

February Shows 20% Increase In Gasoline Demand

NEW YORK, April 29.—Gasoline consumption in 43 states in February reached 665,500,000 gallons, a gain of 111,775,000 gallons over February a year ago, or 20.2 per cent, according to the American Petroleum Institute.

This year's February demand was at the rate of 23,768,000 gallons daily average, or 2,200,000 gallons more than January daily average, or 10.2 per cent.

Gasoline consumption in the 43 states for the two months ended February 1930, totaled 1,334,175,000 gallons, compared with 1,164,336,000 gallons for the corresponding period of 1929, a gain of 169,839,000 gallons, or 14.6 per cent.

Gasoline consumption figures for the 43 states are given in the accompanying table.

FEBRUARY GASOLINE TAX REPORT

(Figures in thousands of gallons)

	Feb. 1930	Feb. 1929	% Change over Feb., 1929
Alabama	13,073	11,600	+12.70
Arizona	6,255	5,342	+17.09
Arkansas	9,277	7,115	+30.39
Colorado	10,358	8,477	+22.19
Connecticut	12,912	10,769	+19.90
Delaware	1,743	1,306	+33.46
Dist. of Columbia	5,116	4,613	+10.90
Florida	21,933	20,599	+6.48
Georgia	16,691	14,109	+18.30
Idaho	3,192	1,916	+66.60
Indiana	26,490	23,874	+10.96
Iowa	23,551	16,197	+45.40
Kansas	25,407	18,139	+40.07
Kentucky	10,189	7,954	+28.10
Louisiana	13,194	10,784	+22.35
Maine	3,328	3,199	+4.03
Massachusetts	29,777	26,837	+10.95
Michigan	47,153	39,173	+20.37
Minnesota	21,257	13,577	+56.57
*Mississippi	10,459	9,210	+13.56
Missouri	27,112	21,894	+23.83
Nebraska	14,936	12,645	+18.12
Nevada	1,049	915	+14.64
New Hampshire	2,890	2,248	+28.56
New Jersey	32,626	30,322	+7.60
New Mexico	3,668	2,693	+36.20
North Carolina	20,818	20,891	—0.35
North Dakota	3,553	3,500	+1.51
Ohio	60,410	51,250	+17.87
Oklahoma	21,631	17,885	+20.94
Oregon	9,577	8,880	+ 7.85
Rhode Island	5,239	4,259	+23.01
South Carolina	8,350	7,607	+9.77
South Dakota	7,611	4,558	+66.98
Tennessee	13,643	10,498	+29.96
Texas	56,171	47,239	+18.91
Utah	3,517	2,654	+32.52
Vermont	1,697	1,667	+1.80
Virginia	13,341	11,250	+18.59
Washington	15,776	13,829	+14.08
West Virginia	6,948	5,813	+19.52
Wisconsin	21,929	14,974	+46.45
Wyoming	1,653	1,464	+12.91
Total	665,500	553,725	+20.19
Daily Average	23,768	19,776	+20.19

Increase over previous year:

Amount of Increase	11,775
Percentage increase in Daily Average	20.2%
New York	102,866

	Aug.	Sept.	Oct.	Nov.	Dec.
Illinois	81,550	84,768	83,211	75,367	63,763

*Estimated.

Virginia Jobbers Meet May 14 and 15

(By Telegraph)

CLIFTON FORGE, Va., May 5.—General marketing conditions and compensation for collecting the state road taxes will be discussed at the opening session of the Virginia Oil Men's Association May 14 and 15 at Roanoke. Paul E. Hadlick, secretary of the marketing division of the American Petroleum Institute, will address the convention.

A golf tournament and the banquet will be held on the first day. David A. Jayne, Charleston humorist, will be the banquet speaker.

The program for the second day is an address on business conditions and new business by M. B. Whiting, president of the association; an address on aviation by Capt. W. M. Stryker, The Texas Co.; and the election of officers and selection of the next meeting place.

Nebraska Standard Offers Consumers Q. D. A.

LINCOLN, Neb.—A consumer's quantity discount on gasoline of 1 cent off the tankwagon price for 1000 gallons or more a month, where the normal tankwagon price prevails, is being offered by the Standard Oil Co. of Nebraska, in the state of Nebraska. The discount is given for consumer tankwagon deliveries only, not from service stations.

A copy of the contract is published in a recent bulletin of the Nebraska Code Bureau, Charles M. Sutherland chairman, and jobbers are advised that, where the discount is given, it should be posted on the price card to conform to the code of ethics price posting provision.

Code Benefits Industry in Curbing Free Equipment Installations

By Paul E. Hadlick*

(Presented before Petroleum Marketers Association, Louisville, May 7)

SINCE the advent of the national code of practices for marketing refined petroleum products I have talked with a great many oil men, some representing large companies, some individual business men, and I have learned many and varied opinions as to its benefits and effectiveness. But one point has stood out in my conversations with the more sincere—and by sincere I mean those who have taken the code to mean something in this business—and that point is the appreciation of the benefits under Rule I.

I am told that, comparing previous spring seasons with that of 1930, there has been not only a decided saving in installation costs, but noticeable reduction in the amount of equipment installed. In other words proprietors in locations suitable for hot dog stands road houses, or what not, but uneconomical insofar as the dispensing of gasoline is concerned, have proved the wisdom of the rule and the soundness of economics by showing an extreme indisposition to invest the $100 of their own money required to get into the oil business.

Thus we not only have achieved a tremendous saving in outstanding equipment, which depreciates rapidly and needs constant care, but we have left a greater share of the motorist's trade to our already established and desirable accounts. It looks as if we were ceasing to be merely side show barkers for the hot dog stand and the cross roads store.

Perhaps some of you have not been so fortunate. If that is the case, and you still are losing money in the side show business, perhaps it would be wise to ask yourself this one question: "Who is to blame?" It was the code that helped the others; it is that same code that can help you.

I like to refer to this document as "your" code because, after all, it is the code of the petroleum industry, a code that can be made beneficial to all alike if you only will give it a chance and adopt it in your business. You cannot expect to get full benefits from it, however, unless first you understand its principles and, second, you adopt those principles in the every day conduct of your business.

Consider this Rule I which I mentioned as a means of saving money to many oil men. You too can save overhead by reducing uneconomical outstanding equipment in ways suggested in that rule. Its provisions are simple enough so that he who runs may read them—if he will.

The savings accuring to those companies and individuals who have adopted the code alone have more than compensated for the time, effort and expense of putting Rule I into effect. At the same time they also have more than offset any real or imagined competitive disadvantages.

MR. HADLICK'S observations on the working of the code of ethics are based on experience with marketing practices in various sections of the country. As secretary for Minnesota and Dakota jobber associations for many years he became familiar with the quantity discount agreement and the lease and licenses contracts, the two main features of marketing in the middle west. As secretary of the marketing division of the A.P.I. for the past few months he has traveled over many states, especially in the east and south and studied conditions in these sections.

If you are one of those so unfortunate as to have failed to adopt this rule in your everyday business affairs, I earnestly solicit your acceptance of it at once, for the good of your profits, your business and the entire industry.

Another rule similarly has returned benefits of untold value to those who have invested in it. I refer to Rule IV, which based upon good ethics and sound economics, insists upon respect for contracts. You and I can recall some of the scraps over dealer accounts that took place in the oil business not many years back. Some companies went so far as not only to interfere with the contracts of others, but offered to stand behind the dealer in any lawsuit that might ensue. Certainly, if you do not respect the contracts of others in the trade you cannot expect them to respect your own. Such a state of affairs can lead only to endless turmoil, discontent, loss of pride in your industry and, if carried to the logical conclusion, to financial ruin.

Now Rule IV, like the whole code is based upon reason. I think I have just told you one reason for its coming existence. And many of you who have been wounded in the old battles over contracts will agree with me it is a very good reason. As a matter of fact the entire code, like all good law, is based upon reason. It once was said that "when the reason for a law ceases, the effect of the law itself ceases to exist." Some modern lawmakers have varied from this principle, as the ineffectiveness of their legislation proves. But with the code we have found real reasons for its existence and we have found a real and growing effectiveness in its provisions and acceptance.

Of course when we come to the rules in Group II we might admit that they are not exactly based upon any rule of reason. But we must recognize them as logical, as constituting a set of rules of good conduct of business in the petroleum industry. However arbitrary and more or less logical they may seem, the fact remains they are rules sanctioned by the federal government which we may agree upon and follow without fear of violating the law. That in itself might be considered a very good and very logical reason for them in these days of multitudinous laws.

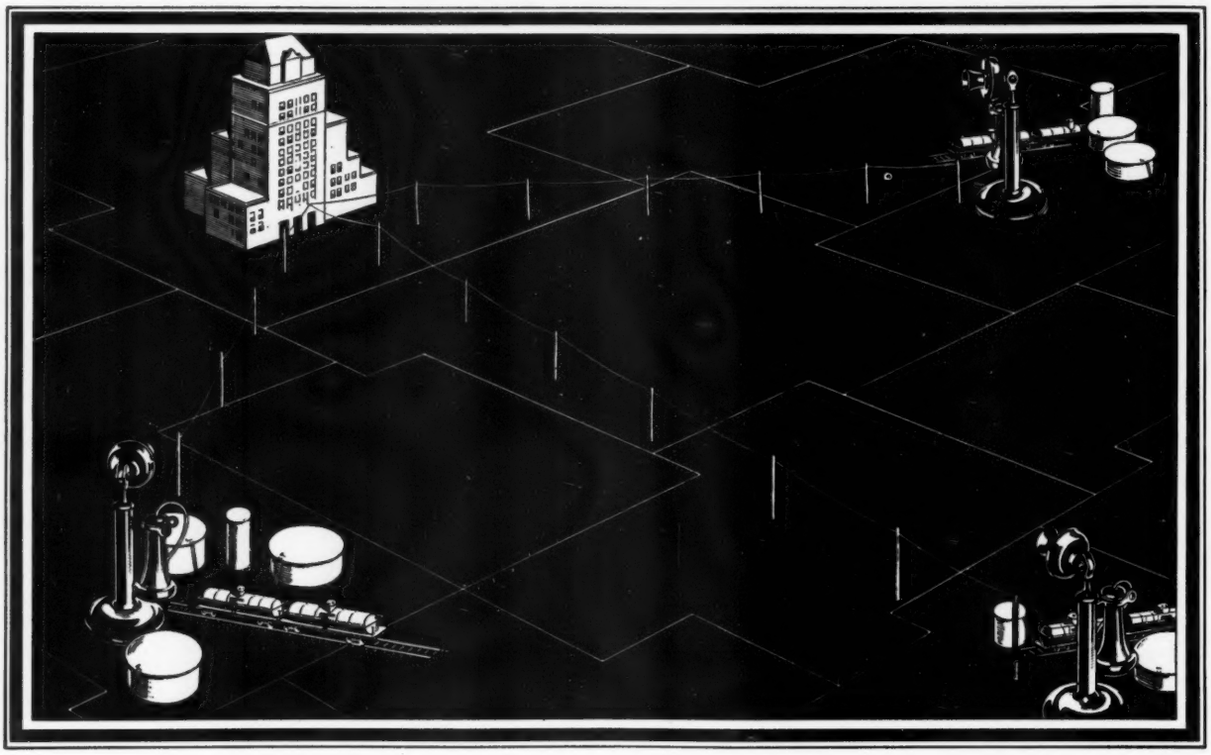
Whatever their shortcomings, these Group II rules really represent a step in the right direction. They establish for us rules of conduct that we should agree upon, accept and abide by in a sportsmanlike manner. Acceptance of Group II rules places you on your honor. You wouldn't think of cheating at cards; you wouldn't think of hitting a man below the belt; you wouldn't stand idly by and let another be so treated. It would be against your inherent sense of decency and sportsmanship.

Here is an opportunity to introduce true sportsmanship, those indefinable, inherent ethics Americans are famous for, and rightly proud of, into business, an undertaking in which they

(Continued on Page 48)

*Secretary marketing division of American Petroleum Institute.

Let Private Telephone wires connect your Distant Offices



A LARGE oil company has headquarters in New York and district offices in New England cities. It is essential that these be operated in close conjunction, especially in such matters as deliveries, prices and sales. The needed co-ordination is brought about by Bell System Private Wire Telephone Service—the exclusive use of telephone circuits between two or more cities.

Private Wire Telephone Service makes possible close supervisory control over all units of an organization. It is a convenient medium for administrative discussions. It facilitates the transmission of general information, technical specifications, orders, etc. It makes fewer trips necessary for busy executives.

A food products company has a private telephone service from its plant to New York to make purchases, talk to dealers, receive orders. A steel company conducts administrative and other important business between mill and main office 440 miles apart. A brokerage house connects branches and New York office, for stock trading and market gossip.

Private Wire Telephone Service gives the quick, two-way communication so vital in meeting modern conditions. It speeds business. It lessens the handicap of distance. Your local Bell Company will gladly give you complete information. For inter-city business, the telephone is *Quick . . . Convenient . . . Inexpensive.*

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Deep Tests for Lower Cretaceous Oil Under Way in Louisiana

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, May 2

FRESH wildcatting for possible deep production in the Trinity beds of the Lower Cretaceous geological section is getting under way in four parishes of North Louisiana.

Another location has been made on the Sugar Creek dome, Claiborne parish, by the Triangle Drilling Co., the Standard Oil Co. of Louisiana and the Palmer Corp., operating as a three-way partnership. The test is in the center of the southeast quarter of the southeast quarter of 6-19-5, a half mile northeast of a 2,000,000 cubic foot gasser recently completed by the same interests, making 25 to 30 barrels of oil at 4558 feet.

In Bossier parish, northwest of the Cotton Valley oil and gas field of Western Claiborne parish, the Palmer Corp. has made location for a deep hole in 28-22-11. The test is south of one previously drilled by the Arkansas Fuel Oil Co., in the same section. North of the old Arkansas fuel test, Reed Clark and others are starting another test in 7-21-11. Both are geological locations, but structural data inferred by the two interests appears not to agree.

Benedum & Trees are to drill a 6000-foot test on their Peavy-Wilson block of leases in Sabine parish, which adjoins De Soto on the south. Location has been made in 2-16-13, where geological indications are said to be favorable. Northern Sabine parish has been recently the most active area of the North Louisiana region, responding to chalk pay development at the 2400-2500-foot level in the related Zwolle and Blue Lake territories.

R. L. Gay, discoverer of the Blue Lake area two years ago and of the Zwolle field last Thanksgiving, will test the 3500-3600-foot horizon in the Blue Lake district, about seven miles southwest of Zwolle development. A test in 23-7-14 once showed oil in sand streaks between 3544 and 3676 feet. The new test contemplated will be near the one in which the old showings were found.

The No. 5 Bowman-Hicks test of the Benedum & Trees interests, one half mile west of their big well in 34-8-12, Zwolle district, will be deepened to 4500 feet if necessary to make an adequate try for production. The Benedum-Trees interests bought out the Zwolle area properties of R. L. Gay and associates early in the present year, now controlling the discovery well of the district and important adjacent acreage.

Daily average yields of the discovery well still exceed 2000 barrels daily, 12 per cent water, notwithstanding it has been producing more than five months. Most of the other successful completions in the Zwolle area, however, yield from 150 to 450 barrels initial production daily. Some tests offsetting producing wells fail altogether.

A producing well at Zwolle is no indication that an offset will pay off, nor is a dry hole a faithful indicator that its offset will not produce. Generally speaking, the present chalk level of production presents the tricky yield characteristics of a similar horizon found in the early development of the Caddo district, north of Shreveport.

The feeling is growing among Zwolle operators that consistent production, when and if found, is to come from horizons deeper than the present chalk rock pay, possibly at depths of 5000 to 6000 feet. Based on the wide scope of area now involved in Chalk rock development the discovery of consistently large production at deeper levels would open an enormous territory of the type to be considered more at a general district than an individual field.

GULF Refining Co. of Louisiana has made location for a deep test southeast of Logansport, on a geophysical "high" in De Soto parish. It is in the south half of the northwest quarter of 14-14-11, southwest of the Spider Gas structure under test by the Benedum-Trees interests. Oil shows of non-commercial character have been previously developed in the Logansport area.

R. O. Roy, who recently drilled a De Soto parish discovery well in 5-13-13, near Holly, eight miles north of Mansfield, is starting two additional tests on his individually controlled block. The discovery well is still making 1200 barrels daily, choked production. Mr. Roy plans to maintain pressures in the Holly area by returning gas to the oil producing horizon from the start, seeking thereby to obtain maximum recoveries under best possible operating conditions.

A half mile northeast of Roy's discovery well, the Arkansas Fuel Oil Co.'s No. 1 Scott test, in 32-14-13, failed to pick up the sand at the expected level. It is now being deepened from 2862 feet, where the red brown shale formation was believed to be of Lower Cretaceous age. Production of the Roy discovery well has been referred to the overlying Woodbine horizon of the region.

The Arkansas Fuel test checked about seven feet higher structurally than Roy's gasser of the Holly area and 15 feet higher than his oil discovery. Normal rise of the Sabine Uplift in the region is, however, to the northeast and the failure of the Arkansas Fuel Oil Co. to find the sand in its test strengthens the theory of the lenticular character of the Woodbine thereabouts.

Roy's No. 1 Lee test, approximately one-half mile due east of his oil discovery, was last reported drilling at 1930 feet. It also has a chance of missing the Woodbine pay, based on the failure recorded at that level in the Arkansas Fuel test.

Observers now consider the trend of the field will be found to extend northwest-southeast along an old shore line paralleling the Sabine Uplift. An old test drilled by Snell and others in 30-14-13, which had shows of oil, tends to strengthen this conclusion.

Diagonally southeast across a township and about three miles northeast of Mansfield, an old test drilled by A. A. Fair in 1-12-13 is significant. The Lower Cretaceous was found at 2569 feet in the Fair test as compared with 2862 feet in the Arkansas Fuel test mentioned. Identification of the Specific Lower Cretaceous beds has not been made in the Arkansas Fuel test but in the case of the Fair well they were definitely referred to the Trinity group at the depth mentioned.

In the Urania field of Caldwell parish, the Arkansas Fuel Oil Co.'s deep test in 24-10-1E, got salt water in a coarse sand provisionally identified as the Blossom horizon at a depth below 6000 feet. The Nacatoch formation was logged in the Urania test at 4731 feet. Exact data on present depth is being withheld from operating companies, but the status of the test is such that abandonment is forecast.

Flush Fields of Texas Creep Up In Daily Yield Column

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, May 2

THREE flush fields, in as many Texas producing regions, creep up steadily in the southwestern oil industry's yield column.

Darst Creek, in the Guadalupe county division of the Luling fault zone, went to 23,830 barrels daily May 1, as compared with 15,000 barrels daily under earlier prorating practice. The recognized potential production of Darst Creek, May 1, was 235,884 barrels daily from 120 wells and 92 producing units.

The cooperatively developed Van field of the East Texas Woodbine sand region is now being exploited above 20,000 barrels daily average, from 27 wells. This field, on the eastern edge of Van Zandt county, has potential production between 100,000 and 150,000 barrels daily. All wells have been on small chokers since their first completion.

Ector county, where 21 wells are producing in the Judkins area of the West Texas salt basin, averages approximately 12,000 barrels daily, although capable of two or three times that much. Prorating practice has not been adopted there, although drilling now under way may necessitate some steps looking toward curtailment later in the year.

Three other areas in the salt basin region, two in West Texas and the third in southeastern New Mexico, promise increasing importance later this year.

The Hobbs district will be the greatest influence in bringing Lea county, New Mexico, to estimated[1] daily production of 75,000 barrels by Sept. 1, 1930, and 100,000 barrels by Jan. 1, 1931.

Two Texas spots of indicated future production are a one-well field near Shafter Lake, in Andrews county, and a wildcat structure which extends from northwestern Crane county across the Ward county boundary, mainly on the Waddell ranch.

Because of its acreage control almost exclusively by the Gulf Production Co., leisurely development of the Ward-Crane area will result, even should its resources assume large proportions.

Presence of the subsurface lime structure under the Gulf block was indicated by findings in the incomplete No. 1 Tubbs test, drilled in partnership by the Gulf and the Cranfill Bros. Oil Co., of Dallas, in Sec. 8, Block B-27, on the Crane side of the county line. The test showed 100,000 cubic feet of gas at 1415 feet and picked up non-commercial oil below 1600 feet.

At 2330 feet drilling in lime and anhydrite, engineering data indicated the top of the main lime horizon would be found at 2600 feet, or slightly lower. The test surface elevation 2526 feet above sea level, was running 740 feet higher structurally than the No. 1 Lea wildcat of the Cranfill interests previously drilled five miles east of the Tubbs.

Deep tests to the west of the structure in Ward county, and a Crane county failure of the Cosden interests in block B-22, have given clews to subsurface conditions for correlating the formations; indicating a buried "high" of the type that, in the past, has always been the forerunner of a field in the Permian salt basin region.

As regards the Shafter Lake region of Andrews county, the No. 1 Mathis test of the Deep Rock Oil Co., Atlantic Oil Producing Co., and the California Co., found the usual gas sand of the region at 2930 feet, surface elevation 3192 feet. It is in Sec. 4, Block A-46, 40 feet lower structurally than the No. 1 Ogden discovery. The gas sand is about 15 feet lower than in the No. 1 Miles, Sec. 32, one and a quarter miles south of the discovery.

The Deep Rock discovery, which is making about 100 barrels daily from the 4100-foot producing level, will be served by the Atlantic Pipeline Co.'s Midland-to-Hobbs system, due for completion by June 1. The area is about halfway between its Midland tank farm and the Hobbs development.

CONFIRMATION is made of the recent sale by the Amerada Petroleum Corp., to the Atlantic interests, of 7500 barrels of crude daily upon completion of three wells the Amerada is drilling in the Hobbs territory. The contract calls for final delivery of 3,000,000 barrels.

Atlantic, whose pipeline requirements have increased since the decline of controlled production in the Winkler region of West Texas, may also draw some oil from the Judkins district of Ector county. It owns a one-sixth working interest in the Kloh-York acreage operated by Humble Oil & Refining Co., on the east side of the field.

Robert R. Penn, who drilled the Judkins district discovery well on a six-section block obtained from the Humble, got one-third of the working interest for the test; Atlantic entered into a partnership with Penn on his one-third interest, which thereupon was split into sixths.

PRESENT production of the Humble-Penn-Atlantic interests in Ector county approximates 3730 barrels daily. Cosden Oil Co., Inc., which is shipping its production through the Magnolia pipeline to its Big Spring refinery, is averageing 2875 barrels; Gulf Production Co., 2115 barrels; and Landreth Production Co., 2115 barrels.

Shell Petroleum Corp., Simms Oil Co., and a partnership of the Skelly-Amerada companies, also produce from single wells owned by each in the Judkins area. Exploitations of the last mentioned companies range from 200 to 750 barrels daily.

On the salt basin region the most important recent transaction reported is that of Continental Oil Co., taking over from the Texas Pacific Land Trust a total of 145,654 acres of wildcat leaseholds in Ector, Loving, Culberson, Reeves, Reagan and Midland counties.

In the Edwards Plateau region, south-southeast of the salt basin province, a wildcat test of the Seaboard Oil & Gas Co., in Kendall county, had a show of oil and gas at 930 feet, where it is now shut down. The test is two miles northeast of the Sterling and others No. 1 Werner test, which had similar shows at 914,934 feet.

Southwest Texas development centers mainly in the Refugio district, where Coastal production of non-salt dome character has been developed in the region of Corpus Christi. Daily average production has assumed a fairly stable level at its current average of 41,978 barrels daily. A total of 107 wells are producing in the field, giving a daily per wall average of 392.3 plus barrels.

[1] NATIONAL PETROLEUM NEWS, Page 44, April 23, 1930.

Oklahoma City Field Gets Half Mile Extension: Wanette Is Active

By William F. Lowe
N. P. N. STAFF WRITER

TULSA, May 3

FIRST reports on drilling operations continue to occupy for another week the major portion of the production news in the Mid-Continent area. Most of them came as a result of the discoveries and extensions made the previous week and if it will just stop raining for a little while, some promised booms can really get going.

The greatest number of new locations in one area were made in the Oklahoma City pool where 26 new rigs indicate a stretching in three directions. These were largely due to the recent completions though several on the southeast look more like somebody was reaching for the edge of the producing territory.

There were nine new producers brought in at Oklahoma City during the past seven days and their average initial was 7463 barrels. The pool is over a year old now and has 211 producers but there is not one dry hole within the productive ranges and the new ones are just about as big as the first ones in. Truly, this field would be a producers' paradise were it not for proration and a few other little drawbacks of like nature.

In the Konawa pool of Seminole county, Okla., five first reports cluster around the big wells brought in last week by W. B. Pine and the Twin State Oil Co., both of which were slight extensions on the south. The combined initials of these wells was approximately 10,000 barrels which is more than the whole pool was making at that time.

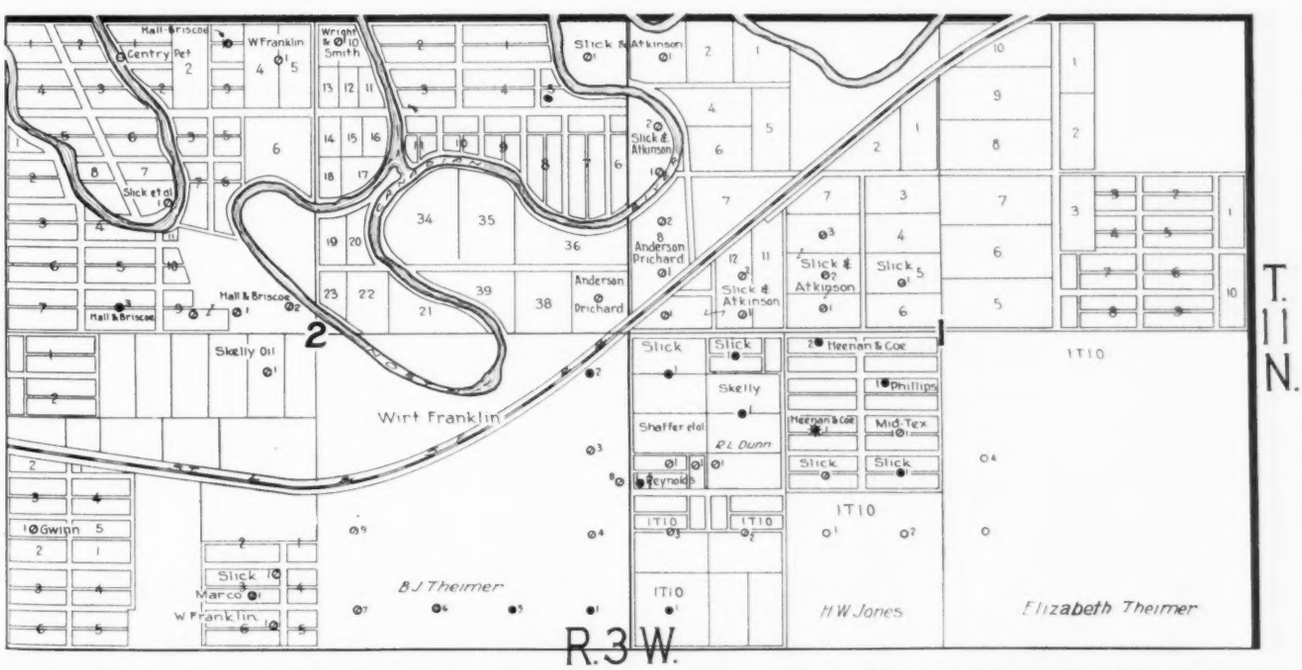
Pottawatomie county, Okla., has a real boom on around the Payne well near Wanette that was completed some weeks ago. Seven new ones are on the way down near it and the excitement is growing as the well that started the activity, increases its yield every day. It now seems that a new sand is making the oil and stray though it may be, it is worth the efforts being made to reach it.

In Kansas, the center of interest for the past few days has been the quarter mile extension to the Raymond pool of Rice county. Ten wells are drilling in this Siliceous lime area and the pool will shortly be reaching the adult stage, though the present proration to 50 barrels per day per well will keep it in the potential column.

The Ritz pool of McPherson county, is just about to lift these same restrictions from the 10 gushers it boasts and raise the limit to 50 per cent of the potential. Water has hurt the production, however, and open flow tests indicate that 10,000 barrels is about the best total daily figure. Some of the wells had initials almost that large.

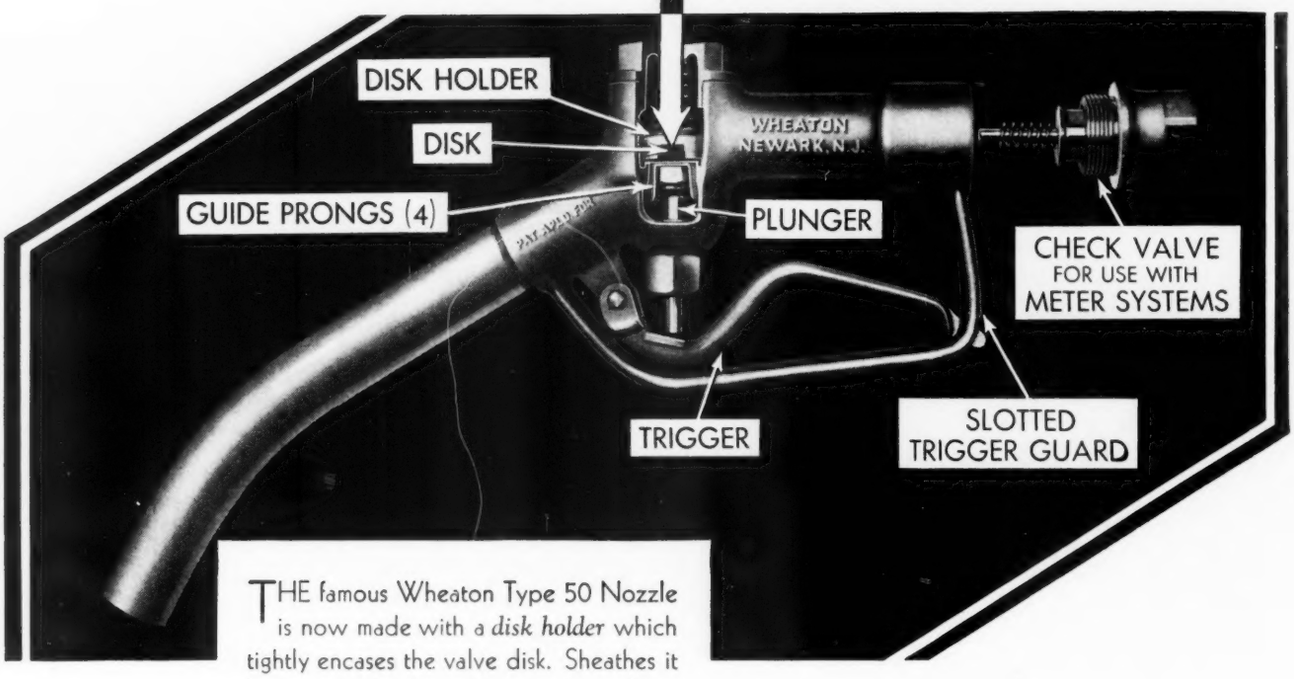
There were several good completions in the Texas Panhandle, though they were all in well proven territory. The implication in that remark is that production can be expected anywhere in the plains region if oil is in the neighborhood. But that is not quite true for the Panhandle is the home of the geologist's alibi. The result of the new wells has been a sizable increase in the total daily average output for the area as evidenced by the 103,537 barrels registered during the past seven days.

The accompanying map shows the trend of edge development at the



Map of the north end of the Oklahoma City pool showing the town lot development on the edge of the city limits. Many of the locations shown are new this past week and it is understood that there are many more to follow in the near future. Because of the small property split it was impossible to show all the ownership. Some of the wells are located on but four lots and others have even less

THE DISK LASTS MANY TIMES LONGER



THE famous Wheaton Type 50 Nozzle is now made with a *disk holder* which tightly encases the valve disk. Sheathes it from saturation! Protects it from disintegration! Makes it *last* many times longer!

In the cut-out view above, you will observe that the disk holder almost completely encases the disk. Notice, too, the disk seat and the groove into which the rim of the disk holder slips as the disk wears down —assuring remarkably long life of the disk and freedom from a leaking valve.

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north end of the Oklahoma City pool. The town lot divisions shown are not within the city limits, but they border it and are well inside the built-up additions. It is quite evident that engineers had to use a slip stick to figure some of them out. A spite fence between them here and there, forces an operator to skid his pipe in endwise in order to reach his two-lot location. But it's all good fun and is really but a bit of practice for the campaign within the city later.

There is very little doubt in the minds of operators that all of the territory shown is productive, and by that is meant, wells good for 10,000 barrels or more. The producers shown in the central portion of the lower half of the map all had initials in excess of this figure. They are sand wells with a large gas volume and there is no indication that the edge has yet been reached. It seems quite possible that the northern boundary of production may be a mile or two above the top of the map.

Outstanding in the completions of the week in the Oklahoma City pool is that of the Hall-Briscoe No. 1 Lindsey NE SE NW, 14-11-3W, which pushed the western frontier of production out one half mile. It has not been tested as yet but on a basis of its first hour gauge of 520 barrels, it is good for at least 10,000. The top of the sand, found at 6389, is only slightly deeper than it was found in the producers nearer the heart of the pool, which indicates that the dip to the west is not to be as steep as was first supposed.

Another one of those freaks for which this prolific field is noted, was brought in with the completion of the T. B. Slick No. 7 Hoopes, 31-11-2W. The well is bottomed in the Siliceous lime at 6560 and flowed 270 barrels of 68 gravity gasoline in three hours and 45 minutes. There have been several other wells in the area that made large quantities of this volatile almost colorless, liquid but this one is the largest to date.

Near the Asher pool of Pottawatomie county, Okla., the No. 1 Bullock of the Payne Drilling Co., SE SE NE 22-6-3E, has been steadily increasing its production. Drilled originally to the Wilcox sand where it found water, it was plugged back to what was thought to be the Cromwell sand between 3495 and 3525. The pipe was ripped from 3505 to 3510 and the well began flowing more than 700 barrels of 42.6 gravity oil per day. Since that time its production has been gradually increasing and its most recent gauge was 951 barrels.

A question has arisen now as to what its producing horizon really is. Some geologists claim that it is too low to be the Cromwell and have assigned the name of Wanette to the sand, intimating that it is but a stray sand or is part of the upper Mississippian. However this may be, there is no doubt about the fact that development is moving forward in the area.

The production record of the well has been such that seven new wells are going down in the near vicinity and a town boom is on. Acreage that six weeks ago sold for $125 an acre is now being raffled at over $1000. If some of the new wells are as good as the discovery, it's going to be hard to find a lease at even that figure. When it gets that high its time to start a dance hall instead.

The Raymond pool of Rice county, Kansas, was extended a quarter of a mile east this week by the No. 1 Metzger of Allison and Fitzwilliams, SW SE NE, 21-20-10W. The well swabbed 275 barrels in five hours from the Siliceous lime which was topped at 3368. Like the other four wells in the pool, it is making no water and must be shut in for a period of 45 days before it is allowed to produce its 50 barrels per day. Ten other wells are in various drilling stages in the vicinity and with their completion, the present proration plan may be changed and some light thrown on the possibilities of the area.

The Phillips Petroleum Co. seems to have had the major portion of the good luck in the Panhandle and all in Hutchinson county at that. West of the Ranger tamed town of Borger, along the western edge of Block Y, this company brought in three good ones during the past week. The No. 2 Katz, SE W½ SW 35-Y-A&B, made 750 barrels natural from a lime pay found between 3004 and 3013, the No. 1 Cheatham-Johnson, NW SE SE, 38-Y-A&B, for 900 barrels from 3057 to 3064, and the No. 1 M Johnson, NE W½ NW of the same section and block, made 650 barrels from 3060 to 3069. When the Phillips originally bought into this area it was considered just a reserve gas supply.

There were 29 new locations staked in the Panhandle district during the past seven days and 12 of these were in Gray county. Carson county is also active.

Drilling Within City Limits Held Down by Oklahoma City

OKLAHOMA CITY, May 3

DRILLING in the Oklahoma City field having advanced to the city limits, it is certain to come within those limits in a short while. On the east side of the city drilling is in the town-lot stage and this will be carried across the boundary. Considerable leasing of within-the-city property has been done.

Operators who invade the city will be governed by an ordinance passed last winter by the council which is intended to regulate drilling and reduce the fire hazard. It is problematical just how this will turn out. It was designed to hold development to one well in each city block, but the way is left open for closer spacing.

The operator who drills in the city must get a permit from the building superintendent. As defined by the ordinance a block is a tract of land surrounded on all sides by public streets or highways. When such block is of an area of more than five acres it shall be, says the ordinance, "considered . . . as being divided into five acre tracts by parallel lines drawn north and south and east and west through the same and one well may be drilled upon each such five-acre tract therein, provided, that if a tract of less than five acres and more than one acre remains after such division of such tract, one well may be drilled thereon."

Thus it is possible that some wells may spring up on locations of slightly more than an acre.

The principle of majority control in leasing is provided for in the ordinance. An operator who comes before the building superintendent for drilling permit must show that he has all of the property in the block or tract under lease. If he cannot do that he may go before the board of adjustment and upon his showing that he has 51 per cent of all the property in the block under lease, a permit may be granted by this board.

It is not mandatory upon the board to give the permit. It is provided that in such cases a public hearing will be held, the board notifying by registered mail all owners not less than 10 days prior to the hearing. The right of appeal from the order of the board to the district court is provided.

The idea that a city council can thus dispose of the property of an owner who does not desire to lease is a trifle startling but this ordinance has much in common with that of the town of Oxford, Kans., which was upheld by the circuit court of appeals. The supreme court of the United States denied the application of the losers for hearing in the highest court in the attack upon the Oxford ordinance, thus affirming the appellate court's decision.

In that opinion it was held that the regulation of drilling was a proper exercise of the police power and attorneys say the same view doubtless would be taken of the Oklahoma City ordinance were anyone disposed to attack it.

A form of lease being used in as-

sembling lots into block leases provides for the operation of the parcels as an entirety, gives one-eighth royalty to the owners on oil and on gas marketed and $50 per year on gas wells that may be drilled and shut in.

The small tract drilling now going on, illustrated by a map in this issue, is in sub-divided additions to the city that have not been brought into the corporate limits. Therefore, such development has been free of restrictions. The proved area is crawling into a part of the city that is well built up and it is conceivable that it may run into some of the better residential districts.

Shell Opens 30-story Building In San Francisco

SAN FRANCISCO, May 2

A 30-floor building, costing approximately $4,000,000, was officially opened April 16 as the new western headquarters of the Shell Co. It is at the intersection of Battery, Bush and Market streets.

Sir Henri Deterding, head of the Shell interests, attended the opening, as well as Lady Deterding, who came from London especially to take part in the ceremonies.

The new building has an 88-foot square tower faced with cream-colored tile. It has all the conveniences of a modern office structure, including a tube system for telegrams, messages and reports, six high-speed elevators, a four-floor garage served by two automobile elevators, kitchen and tea room, hot and cold wash water, chilled drinking water and 22 refrigerating units in the water-cooling and food preservation plant.

The street on which the building faces was 80 years ago the shoreline of San Francisco bay. Today, several blocks of "filled" ground separate it from the water front, but due to the unfirmness of the sub-soil and the high weight per unit of area developed by the building, unusual precautions were taken in putting in the foundations.

The entire area was excavated to a depth of 28 feet and 66 concrete filled caissons, four feet in diameter, were sunk from the bottom of the excavation to an additional depth of 59 feet. Test borings indicated that bed rock could not be reached within 200 feet of the surface. An 18-inch slab of concrete was then poured over the entire bottom of the excavation, uniting the caissons in one monolithic mass. A 4500-ton steel frame was erected in 58 eight-hour working days, and the entire structure, including preparing the foundations, pouring 20,000 cubic yards of concrete and placing 2,563,000 brick and 46,000 pieces of terra cotta tile facing, took only 10 months.

The main floor lobby is faced with Travertine, French "Napoleon" and black and gold marble. Glass used in doors and partitions is of a soft, translucent texture resembling tapestry fabric and toned to the color of the woodwork.

The new 30-story building of the Shell Oil Co. at San Francisco

Code Benefits

(*Continued from Page* 41)

have been sadly lacking. Through trade practice conferences, such as developed the petroleum industry's code, it is hoped to engender sportsmanship in business affairs, to make it a guiding spirit in all business contracts.

Now you know and I know that before the advent of the code our marketing structure was headed in the wrong direction, and whatever you may say or think about the code you must admit that at least it has done something to stem the growing tide of marketing waste. Intelligently applied in principle and scrupulously followed in spirit the code not only can dispel the ever-growing shadow of marketing waste, but it should tend to lead us to saner methods and practice and result in pruning our structure of considerable overhead.

Mention of overhead reminds me I should caution you about a subject closely related, that is, prices. Our code is not a "Code of Prices;" it is a "Code of Practices."

The code is not designed, nor must it be in any way used, to fix prices or alot territory or do away with competition. Much as you may differ with government policy as regards preserving competition, the courts consistently have held that such is the policy laid down by legislatures and that relief should be sought from the legislative branch of the government, not the judicial. And if the code does not go as far in the way of regulating the oil business as you would have it, please bear in mind there are certain legal limitations by which we must be governed.

We must learn to creep before we can walk, and we must learn first if we are able to govern ourselves as provided by this code before we can rewrite it to cover the more competitive situations. But if we prove ourselves capable of governing under the code we have, there is no reason why future trade practice conferences cannot be held and the code elaborated.

I have told you of a few accomplishments of the existing code. I do not want you to think I believe the code has performed miracles or that it was ever intended to do so. Neither do I want you to think it will cure all your ills. You will always find plenty of troubles in the oil business—or any other. Consequently let me caution against expecting too much from the code. It is well to be enthusiastic about it; it really has done much to help the marketer and to overcome marketing evils; but do not let your enthusiasm run away with you. Let the Code have a chance to work itself out. Let us be sincere, sportsmanlike and tolerant. Above all, let us give this new idea of self-regulation of business as embodied in our code a fair trial before we criticize or condemn it.

FIRST copies of the "Handbook on Unitization of Oil Pools" are off the press. This work was prepared by a committee appointed by the Mid-Continent Oil & Gas Association and may be said to contain all that is known on the subject. It is at once an argument for unitization and a practical guide to the operator who is studying the subject.

There has been much discussion of unitization for several years and nearly every oil producing state of consequence contains one or more examples of its application. Both the Mid-Continent association and the American Petroleum Institute have endorsed it as basic policy for the producing industry. Pursuant to such vote by its directors, the Mid-Continent association proceeded to put into book form all the data that could be obtained.

In the introduction to the volume Secretary Harry H. Smith, of the association, says:

"Early 1930 presents a plethora of petroleum as a world condition. Every present day indication is that this condition will continue indefinitely. Unless some method is devised to control and allocate production as between states and countries (which seems impossible at the present writing), the only hope of the American producer to maintain his relative position notwithstanding his deep wells is to reduce his costs by eliminating unnecessary drilling and securing the maximum ultimate recovery at the minimum of outlay.

"Temporary expedients such as proration orders and tariffs may help for the time being, but they are palliatives, not cures. The trouble is deep-seated and chronic and only may be eliminated by fundamental change in the methods and practices of oil production whereby separate individualistic holdings and activities are merged into undivided, cooperatively managed interests whereby the oil pool, as distinguished from the individual lease, shall become the competitive unit."

The book contains a number of specific instances of unit operation, with data on the savings effected over the competitive plan that would have been followed. The estimate by Clarel B. Mapes, technologist for the association, on what would have been saved in the Seminole pool under unit development is included. James O. Lewis, widely known petroleum engineer, contributed a chapter on comparison of competitive and unit operations in the Cromwell and Seminole City pools.

Of high practical value are the chapters on the principles and rules of practice and those containing the several contract forms now in use among companies who pool acreage for joint development. Unit development is being carried on in several ways and special forms have been developed for each case.

The book is being distributed to all interested oil operators whether they are members of the association or not. There is no charge. The association's offices are in the Tulsa building, Tulsa.

* * *

Golf bugs—real ones—are incapable of thinking in any terms except golf. The best illustration we have found of this occurred one day last week. An oil man was meeting for the first time his brother-in-law who lives in Montana. The latter is a splendid player. Our oil man friend remarked that he had never met another of his brothers-in-law.

"You never met Bill?" said the Montana man. He paused in thought, quite obviously trying to think of an accurate way of describing his brother. Presently he produced this complete characterization:

"Bill sure shoots a long iron."

* * *

W. R. Kavanaugh has been elected managing secretary of the Mid-Continent Royalty Owners Association. He had previously been identified with the Independent Petroleum Association of America and acted as secretary of the latter at its organization meeting in Colorado Springs last June.

* * *

Dr. R. C. Beckstrom, head of the school of petroleum engineering, University of Tulsa, will leave in June for Russia. This is a return engagement as consulting engineer to the Soviet government. The first trip occupied the greater part of last fall and winter.

John J. Durst, a familiar figure in the sales department of the oil Well Supply Co., has resigned and is now living in San Antonio. Mr. Durst was for years in charge of the Rocky Mountain sales territory for Oil Well. He was transferred from there to Tulsa a year ago. Banking interests in San Antonio now claim his time.

* * *

S. H. Keoughan, former president of the Continental Oil Co., has started Rocky Mountain operations with a wildcat test in western Moffat county, Colo. Denver and Eastern capitalists are interested with Mr. Keoughan in the venture.

* * *

Our old friend A. J. (Gus) Hardendorf is very much in the gas doings of western Kansas these days. He was an early comer into the Stevens county play, operating as the Argus Gas Co. The Moody-Seagraves interests with their line to the Omaha district promise outlet for this production. Now Mr. Hardendorf has bought a half interest in the Fredell Construction Co., which has contract to lay 100 miles of the line. All in all he appears to be doing very well. Mr. Hardendorf formerly was a drilling contractor at Casper and had much to do with the Salt Creek development. He went through the Amarillo territory boom with several strings of tools. For the past two years he has concentrated his activity in western Kansas.

* * *

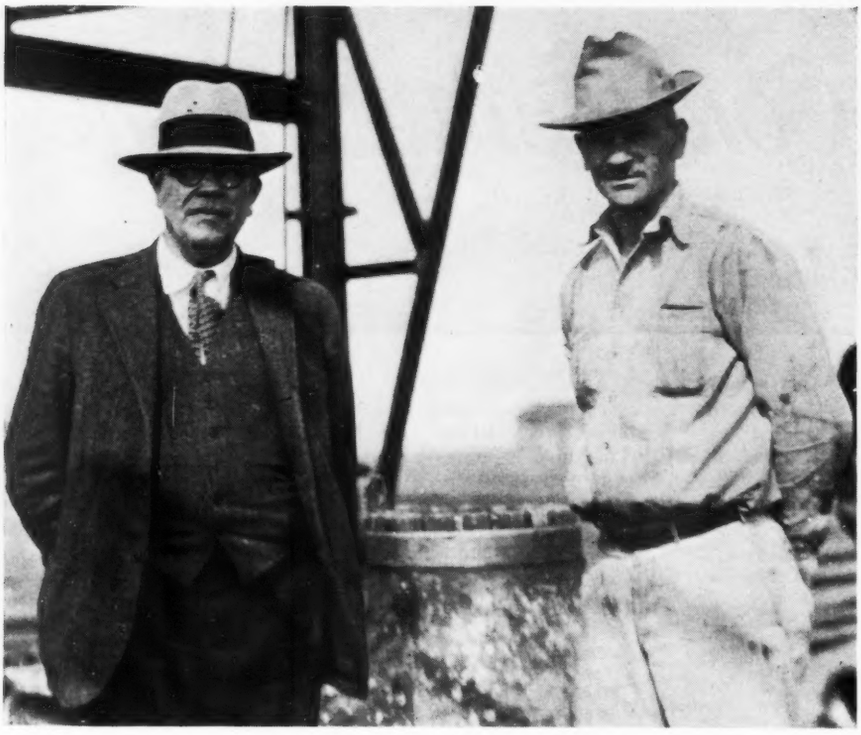
Reece Allen, of Wichita Falls, has bought the Olney Oil & Refining Co. from O. T. Anderson. This company built its plant seven years ago. Mr. Allen was a pioneer refiner in the Amarillo district.

* * *

Died: E. E. LeMaster, of Muskogee. He was general superintendent of the Oklahoma Pipe Line Co. Death occurred in Battle Creek, Mich. He was 58 years old and has been with the Oklahoma Pipe Line Co. since its formation. He is survived by his widow and three children. One son, Tom, is with the International Petroleum Co. in Peru.

* * *

Died: M. J. Bashara, independent oil producer, Wichita Falls. He had been in the oil business in that area since



V. L. Reed, division superintendent of the Skelly Oil Co., and H. H. Haper, Skelly's Oklahoma City field superintendent

1915. His widow, one daughter and three sons survive him.

* * *

J. J. Moroney, former newspaper man and present oil producer, Okmulgee, lets it be known that his newest diversion is turning out well. He began experimenting with paper shell pecan growing last year and he now has 50 acres of fine trees on his farm near Bartlett, Okla.

* * *

Ellick Botts, consulting pumper of the Gray Horse district, will lecture at the Strikeax district school house on the economic dangers of the chain still and the perils of the independent moonshiner.

* * *

V. L. Reed, division superintendent of the Skelly Oil Co., whose picture appears on this page, has enjoyed a varied experience in the oil fields but that part of his division embraced in the Oklahoma City field is giving him some work of a new type. In that area the ingenuity of man is called upon quite frequently. Mr. Reed's bump of inventiveness was asserted recently when sand produced with oil cut connections. The result of his taking thought on the subject was a globe-shaped connection designed to slow the velocity of the sand. It is being used on Skelly wells in the field.

Mr. Reed has devoted 35 years of his life to the oil business. He started as a rig builder in Indiana, worked as tool dresser, driller and contractor and finally went into the producing business. In 1910 he came to Oklahoma and spent eight years with The Texas Co. He has been with the Skelly company seven years.

In the picture with Mr. Reed is H. H. Haper, Skelly's superintendent in the Oklahoma City field. He was promoted to that position from a district foremanship at Bristow. Mr. Haper was winner of the $100 second prize in NATIONAL PETROLEUM NEWS contest conducted during the 1929 International Petroleum Exposition.

* * *

We knew all along that we understood the matter and that certain captious critics were passing judgment too hastily. To show the fundamental authority on the subject we hunted up a Bible. It was necessary to hire a hotel room to find one, but it was worth the trouble. Here is the evidence:

"And the Humble person he will save." Job, 22:29.

"Better it is to be of an Humble spirit . . . that to divide the spoils with the proud." Proverbs 16:19.

" . . . But he is of an Humble spirit shall obtain honor." Proverbs 29:23.

"God restoreth the proud but giveth grace to the Humble." James, 4:6.

* * *

John Thomas, drilling contractor of Weleetka, Okla., has announced his candidacy for the democratic nomination for state representative from Okfuskee county. Mr. Thomas was one time a scout for the Pure Oil Co.

The Barnsdall Corp.'s monthly publication for May devotes its first page to a little justifiable gloating. There is displayed the photograph of the check which was deposited in March by the Barnsdall Oil Co. of California to pay into the sinking fund the final amount of interest due on bonds. With the retirement of the last of the California subsidiary's bonds on April 1, the Barnsdall Corp. and its subsidiaries are free from bonded debt for the first time since the corporation was organized in November, 1916 and in that time the staggering total of $44,716,500 bonded indebtedness has been retired.

Treasurer E. O. Bartlett, in commenting on the satisfaction felt by company executives at being free from bond requirements, indulges in a little jest: "We have often wondered," says he, "if the term 'Sinking Fund' was not originated by some one because it expressed his feelings of a sinking sensation when the monthly installments to the fund came due as required by the trust agreement in connection with the bond issue and he had a hard time finding the money to make the necessary deposits."

* * *

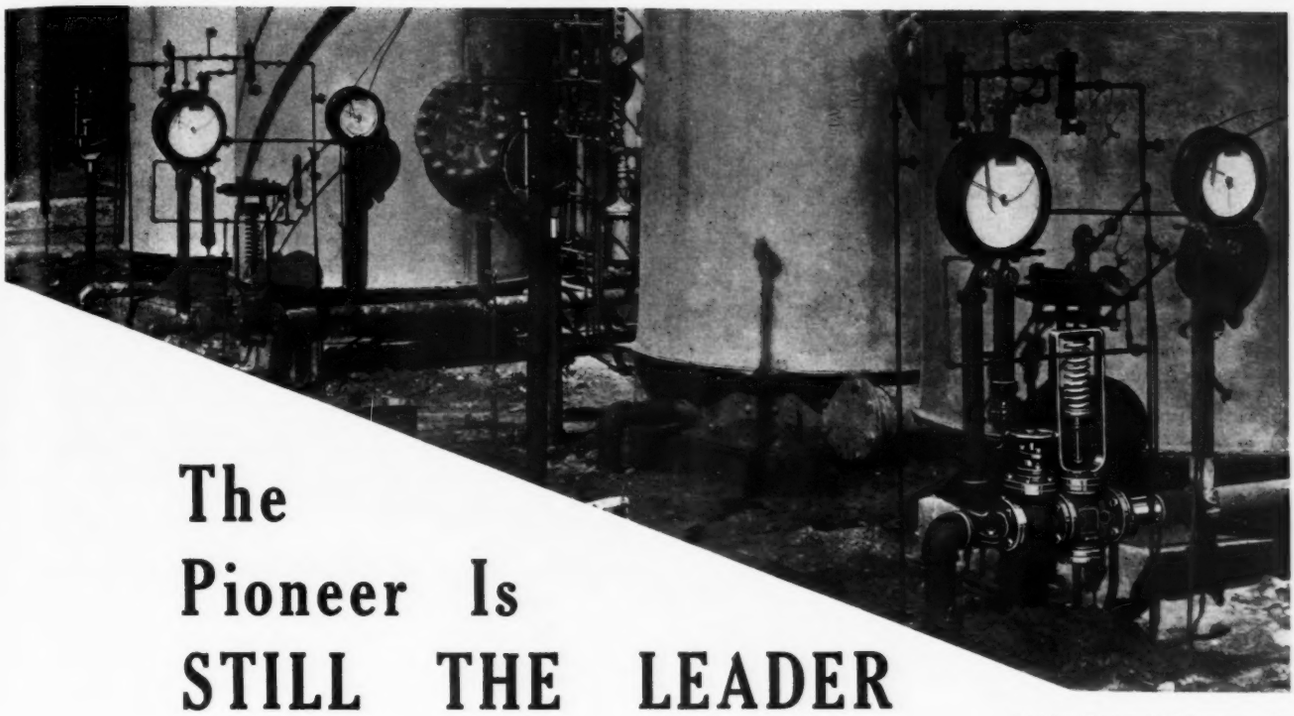
Three department heads of the Phillips Petroleum Co. were elevated to vice-presidents at the annual meeting last week. F. E. Rice, in charge of the natural gasoline division; C. R. Musgrave, who heads the traffic division and H. A. Trower, manager of retail marketing, now have "vice president" on their official stationery. All have played a prominent part in building the company to its present rank.

* * *

C. W. Dingman, petroleum engineer of the Canadian department of the interior, is in the Mid-Continent for the purpose of studying methods used in handling high pressure gas/oil wells, such as the Oklahoma City field affords in great number. Mr. Dingman has offices in Calgary and has to do with the Turner Valley field south of that city. It was his uncle who discovered the Turner Valley field. Mr. Dingman says the prospects are good for much wildcat drilling in Alberta this year. Most of the tests will be located on structure. No, that isn't precisely the way he said it. "On geologists' conception of structure," was his language.

Carter Scout Dies

TULSA, May 3.—C. A. Barlow, Seminole district scout for the Carter Oil Co., died May 1 in Shawnee after an illness of little more than a day. He was 37 years old. He had headed the Carter scouting activity in the Seminole territory since the beginning of development there in 1926. He is survived by his widow and by two children.



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INSTRUMENTS *for* CONTROLLING, RECORDING *and* INDICATING TEMPERATURE, FLOW, HUMIDITY *and* PRESSURE

California Producers Seek Way to Cut Output to 550,000 Barrels Daily

By Jack N. Westsmith
N. P. N. STAFF WRITER

LOS ANGELES, May 3

CALIFORNIA operators have been making a more or less concerted effort to determine ways and means of increasing the efficiency of voluntary curtailment, during the past week. They have been aided in their endeavors by a rumor that the Pacific Coast crude oil price structure would be revised at a higher figure as soon as the local industry reaches an economic balance.

This attitude of co-operation in the latest state-wide curtailment program is not shared by a large number of operators and it is not only the independents who are casting "things" into the proration machinery. Executives of certain major companies express the opinion that additional curtailment would result in too large a withdrawal from existing stocks and others indicate that they are satisfied with the present arrangement.

The research committee, headed by Earl W. Wagy, has formulated a program that, if put into effect, would reduce daily average crude oil production in California to 550,000 barrels, necessitating the withdrawal of approximately 65,000 barrels per day from storage. The committee has made a thorough study of petroleum conditions in California and, while it is not thought the recommended curtailment will be affected immediately, conservationists expect to achieve the 575,000 barrel mark during the coming month.

Umpire H. P. Grimm in preparing the May schedules for fields under his jurisdiction established the following potentials and allowables for the flush fields of Santa Fe Springs, Ventura Avenue, and Elwood:

Field	Da. Av. Estimated potential May, 1930	Total May Potential	Total May Allotment	April Excess or Shortage	Total May Allowable	May Daily Average Allowable
Santa Fe Springs	200,753	6,223,343	3,547,306	303,405	3,243,901	104,641
Ventura Avenue	79,985	2,479,535	1,413,334	34,047	1,379,287	44,493
Elwood	83,846	2,599,226	1,481,559	120,080	1,361,479	43,919

Actual daily production from Santa Fe Springs continues to run between 25,000 and 30,000 barrels in excess of the above allowable and it is not expected the output will be materially reduced until California's gas conservation law is made enforceable. Absence of townlot development at Elwood and Ventura Avenue enabled operators in those districts to reduce their production to nearly the allowables, although, recent completion in the tidelands at Elwood and on top of the structure at Ventura Avenue, yielded considerable flush oil, causing the fields to show some excess production.

The Lyon gas conservation statute, which is now undergoing another period of stagnation through adverse action on the part of two groups of independent producers at Santa Fe Springs, is to be tested before the State Supreme Court as soon as possible. Although the law is in partial enforcement at "the Springs," state officials realize there will continue to be difficulty in enforcing it until it has the sanction of the final state tribunal.

Independent defendants in one or two California fields are expected to take the case before the United States Supreme Court before the matter is finally closed but if the state court declares the law is constitutional and that it does not impose undue hardships on individuals, state officials expect to be able to enforce it.

Whatever the final outcome, independent oil companies are expected to present some very strong evidence to the effect that restraining orders similar to that granted against operators at Santa Fe Springs are nothing less than confiscatory.

Superior Judge Hazlett, in modifying his temporary injunction May 1, granted in the Santa Fe Springs case, March 19, allowed approximately 15 operators to increase their gas production, by making allowances for completions since the order was first granted and for such wells as offset the properties of the Wilshire Oil Group.

This modification, which was made to preserve equities of parties throughout the field until the case may be brought to a final decision, provided that all such wells, as have been completed since April 17 and other completions to be made, shall be allowed a gas production of one-half the gas potential established during the five-day flow test.

It was further stated that no well is to be placed on production or kept on production which produces more than 10,000 cubic feet of natural gas per barrel of oil per day.

The development and production picture on the Pacific Coast resolved itself, during the past calendar week, into a continued search for additional oil reserves and reports of production tests to be made within the coming week at important areas.

One of the most outstanding developments of the week was registered by Union Oil Co. at its Del Rey No. 1, in the Playa del Rey field southeast of Venice. Showings from the core barrel indicated the well was approximately 300 feet higher on the structure than Ohio Oil Co.'s discovery well. With the hole bottomed at 3464 feet a small oil sand was penetrated and, although this Pliocene rock is not thought to be productive, a string of pipe was set at 3450 feet for a production test should further drilling uncover a heavier pay sand.

If the productive Miocene formation, responsible for the production in Ohio's discovery below 6000 feet, extends under Union's holdings, operators in that part of the field will be justified in their optimistic outlook.

Ohio Oil Co. is prepared to make a production test on its Recreation Gun Club No. 2 with the final string of casing set at 6054 feet in a hard formation. In all there are 6 wells below the 4500 mark that may be expected to reach the critical depth within a week or ten days.

With an additional 14 permits recently granted by the Los Angeles City Council, over 100 oil companies and individuals have permission to drill in this newest of California fields and production engineers predict an active drilling campaign during the coming summer months.

In the northern part of the state, operators continued to speculate as to just how much of a well Belridge Oil Co.'s 15 on Sec. 36, 27-20, would prove to be. At latest reports the project was making about 4 million cubic feet of gas with a gasoline content of nearly one gallon per 1000 cubic feet, and between 40 and 50 barrels of oil averaging about 54 gravity. Conditions in the well are

still unfavorable, so much so, that the only solution is thought to call for the well to be killed and recompleted.

Other operators in the North Belridge field and at Lost Hills, including, Associated Oil Co., Richfield Oil Co., Standard Oil Co., Continental Oil Co., Barnsdall Oil Co., and Union Oil Co., together with some small interests, are expected to begin immediate operations to determine the productiveness of this new high gravity oil field.

The Kettleman Hills situation continues to hang fire awaiting findings of the operator's committee on the question of a suitable plan for future development of the area.

Dr. George Otis Smith, who has been visiting the Pacific Coast during the past week, stated the principal reason for his visit in these parts had nothing to do with the recent completion of Standard Oil Co.'s well on Sec. 35 of the north dome, Kettleman Hills, and that he was very satisfied with the fine cooperative spirit shown by California operators.

No mention was made of the government's attitude toward possible drainage of the permit land held by Continental, offsetting Standard's No. 38 and Petroleum Securities' Felix No. 1. Dr. Smith did say, that if a practical plan of development for the area could be worked out it might possibly succeed the existing Kettleman Hills Conservation Agreement. If such action were taken and the Secretary of the Interior terminated the "Agreement" certain existing inequities might be eliminated.

A completion in the prolific Fernando formation at Ventura Avenue by Associated Oil Co. and one by the Barnsdall-Rio Grande interests in the Vaqueros at Elwood caused a considerable increase in the potentials of these fields.

Associated's V. L. & W. No. 11, was completed for 3600 barrels of 28 gravity oil and 3.5 million cubic feet of natural gas per day from a depth of 7371 feet. The new Elwood completion, Doty 6, was completed for an initial production of 1800 barrels, 36 gravity oil at 3615 feet and in conformity with other wells in this field, the flow is expected to increase during the five-day flow test.

On the Western Front

By Jack N. Westsmith
Los Angeles

SIR Henri Deterding head of the Royal Dutch-Shell company, recently returned east following an inspection tour of the Shell interests in California that included a visit to the company's new office building in San Francisco.

Sir Henri commended California operators on their co-operation in conserving oil but rather put his foot in it with local independents by his remarks to the effect that small oil producing units cannot exist in a world demanding the best of service and a return on its investments.

Stating that he was in favor of spreading the conservation movement around the world and that the Shell interests would meet any conservation steps taken by any other company. Sir Henri, approved California's action against natural gas wastage and closed by stating that the oil industry is suffering from under consumption rather than overproduction of petroleum products.

* * *

H. W. Pierce, formerly a member of the construction corps of the United States Navy, a graduate of the Naval Academy at Annapolis and possessing a M. S. degree from the Massachusetts Institute of Technology, has been engaged to assist in engineering work of Union Oil Co.'s transportation department in development of improvements in pipe line and marine transportation units.

* * *

U. S. Waugh, one of the old time Kern county operators, has returned to California after spending several years in the Mid-Continent, and Texas fields. He has his headquarters in Los Angeles now as office manager of the California Petroleum Exchange.

* * *

R. W. Phelps, for the past 12 years a member of the geological department of Union Oil Co., recently resigned from the organization in order to enter into private practice. Phelps received his engineering training at the University of California and during most of the time he has been with Union he served as petroleum engineer in charge of Orange county with headquarters at Brea.

* * *

With the election of officers and directors the organization of the Miley Petroleum Corp. Ltd. has been completed. Arrangements have also been made for the developing of the company's lands by other companies.

Mr. Miley, founder of the Miley Oil Co. has retired as president to devote his attention to private affairs but he will remain a director of the new organization.

The new officers are as follows: Clifford De Lorme, president; W. H. Taylor, vice president; E. H. Elliott, assistant secretary. Directors include: W. H. Neblett, attorney; W. H. Taylor, E. J. Miley, W. N. Thayer and Clifford De Lorme.

* * *

G. H. Van Senden, who has been identified with refining activities during 18 years of service with Shell Oil Co., has been promoted to the newly created position of vice president of manufacturing for that company.

* * *

W. R. Wardnar, a petroleum engineer and for several years an operator in the Kern river fields of the San Joaquin Valley has been appointed by Umpire Grimm to assist him in keeping a check on the "Valley" in fields of Mt. Poso, Maricopa Flats, Lost Hills, and Kern Front, during the proration period, March 1 to June 1. Mr. Wardnar will have his headquarters in Bakersfield, Cal. in the offices of the Signal Oil and Gas Co.

* * *

L. P. St. Clair, executive vice president of Union Oil Co. California was recently reelected president of the Independent Oil Producers Agency. S. W. Morsehead was elected vice-president and W. B. Robb secretary. This is the twenty-fourth consecutive time that Mr. St. Clair has been elected to the position of president of the organization.

* * *

According to a resolution passed by the board of directors of the California Oil and Gas Association it was recommended that oil companies in Southern California establish working hours for office employees of from 8 a.m. to 4:30 p.m., effective May 1 to Oct. 1. This move is taken to enable the tired working girl and business man to enjoy a few more hours of California's sunshine, orange blossoms and movie stars.

* * *

Schuyler Henry, geologist for Standard Oil Co. expects to return within the immediate future to Columbia, South America, to continue geological surveys for his company in that area. Mr. Henry is particularly well known throughout the San Joaquin Valley where he has carried on several surveys for Standard.

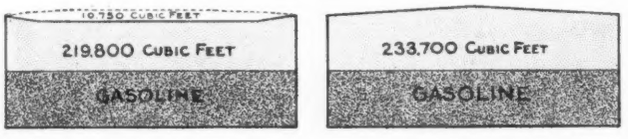
Even with tanks *half filled*

WIGGINS BREATHER ROOFS

Annual Savings with Breather Roof over Cone Roof

CONDITIONS

1. Each tank is 117 ft. x 41 ft. 10 in. = 80,000 barrels
2. Daily expansion air-vapor mix = 10% of air-vapor volume
3. 30 cu. ft. gasoline vapor = 1 gal. gasoline
4. 110 cu. ft. air-vapor mix = 1 gal. liquid gasoline
5. Value of gasoline = 10 cents per gallon
6. Slope of cone roof = ½ in. : 12 in.



WIGGINS BREATHER ROOF	cu. ft.	CONE ROOF TANK	cu. ft.
10% × 219,800	= 21,980	10% × 233,700	= 23,370
Saved by roof	= 10,750	Saved by roof	= 0
Daily loss	= 11,230	Daily loss	= 23,370

AVERAGE DAILY SAVING AIR-VAPOR MIX

Air vapor loss, cone roof	= 23,370 cu. ft.
Air vapor loss, Breather Roof	= 11,230 cu. ft.
Saved by Breather Roof	= 12,140 cu. ft.

AVERAGE DAILY SAVING OF GASOLINE

12,140 ÷ 110 = 110.3 gallons

ANNUAL SAVING IN DOLLARS

365 × 110.3 = 40,259 gallons
at 10c a gal. = $4,025.90

show evaporation savings

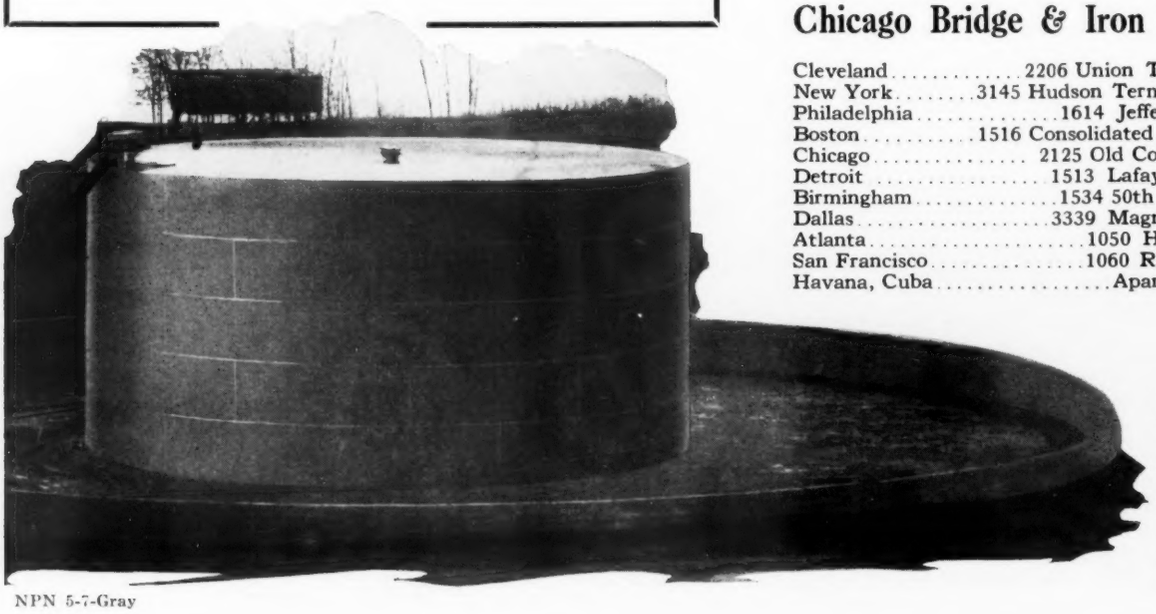
WHILE the Wiggins Breather Roof shows maximum effectiveness on full tanks in standing storage, it gives a considerable margin of evaporation savings over the ordinary vented steel roof on working tanks or storage tanks that are not full. The mathematical comparison of two tanks at the left explains the reason why.

The Breather Roof may be installed on tanks of any diameter — furnished with new tanks or applied when re-roofing old tanks. If the old cone roof is in good condition it can be converted into a Breather Roof at small cost.

For working tanks, the Wiggins Floating Roof is recommended to eliminate filling and emptying losses and fire hazards. Our nearest office will gladly supply you with evaporation data and estimates on roofs, tanks, and other plate work.

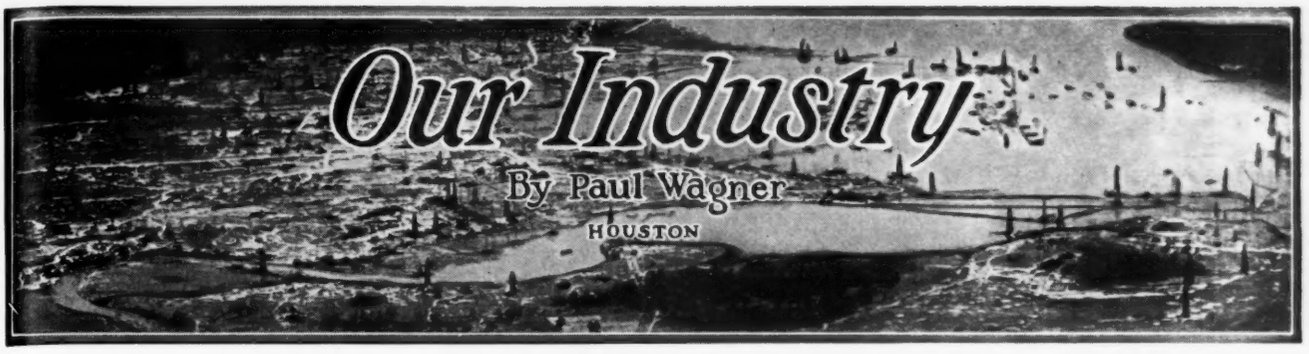
Chicago Bridge & Iron Works

Cleveland	2206 Union Trust Bldg.
New York	3145 Hudson Terminal Bldg.
Philadelphia	1614 Jefferson Bldg.
Boston	1516 Consolidated Gas Bldg.
Chicago	2125 Old Colony Bldg.
Detroit	1513 Lafayette Bldg.
Birmingham	1534 50th Street, N.
Dallas	3339 Magnolia Bldg.
Atlanta	1050 Healy Bldg.
San Francisco	1060 Rialto Bldg.
Havana, Cuba	Apartado 2507



Wiggins Breather Roof, 61 ft. diameter, on a 15,000-barrel gasoline storage tank located at Cincinnati, Ohio.

NPN 5-7-Gray



AN accompanying picture taken on a recent trip through West Texas territory shows, from left to right, Carl A. Young, standardization director and secretary of the American Petroleum Institute's division of production, with Dallas headquarters; Ray W. Richmond, proration umpire for the Yates field of Pecos county; and Walter H. Meier, chief engineer of the Atlantic Companies at Dallas, who also is chairman of the southwestern district of the A. P. I. division. All are too widely known to require further introduction.

* * *

P. P. Gregory, formerly of the petroleum engineering department of Humble Oil & Refining Co., now is in the organization of Ray W. Richmond, proration umpire of the Yates field, Pecos county, West Texas. He makes headquarters at Iraan, Pecos county.

* * *

S. H. Casteel has established geological consulting offices on the fourteenth floor of the Petroleum building at Fort Worth. He was formerly chief geologist of the Landreth Production Co.

* * *

R. L. Gay, widely known Louisiana oil operator, has returned to his home at Zwolle after undergoing a serious operation in a hospital at Rochester, Minn. He is reported recovering satisfactorily.

* * *

Lew H. Webster, individual operator of Shreveport and West Texas, spent a few days in Houston the latter part of April on business. Mr. Webster is now associated with K. E. Merren, widely known Shreveport operator. At one time Mr. Webster was identified with The Texas Co. in North Louisiana and Arkansas.

* * *

C. A. Petty is president of the newly formed Kettleman Hills North Dome Oil Co., Ltd., organized in California to acquire and develop producing properties.

* * *

Schuyler Henry of the geological staff of the Standard Oil Co. of California, San Francisco, will have charge of exploratory work to be conducted in Columbia, South America, through the subsidiary Richmond Petroleum Co.

R. I. Kerr will be in charge of a new western marketing district of The Texas Co. of California, comprising the states of Montana, Utah and Idaho. Assistant district managers are C. A. Turner and J. W. Hufsmith.

* * *

Frederick G. Clapp, consulting geologist, who has spent a large part of the last three years in the Near East, recently returned to New York headquarters.

* * *

Robert W. Olinger, general manager of the Huasteca Petroleum Co., operating subsidiary in Mexico of the Pan American Petroleum & Transport Co.. was elected vice president at a special meeting of the board of directors recently held in New York.

* * *

Glen C. Kuhns, division inspector, has been elected president of the Southern Division Employees' Association of the Standard Gasoline Co., Inc., Los Angeles.

* * *

Eddie Horn, for three years connected with Chicago headquarters of the Pure Oil Co., has been transferred to the Beaumont office of the Pure-Van Pipe Line Co., which will operate between Van Zandt county, East Texas, and the Smiths Bluff terminal of the Pure on the Gulf Coast, when completed.

* * *

Robert W. Phelps, petroleum engineer, formerly identified with the Union Oil Co. of California, has opened consulting offices at 424 South Madronastree, Brea, California.

* * *

A. W. Mitchener of the Pure Oil Co.'s refining department has been transferred to Smiths Bluff, Texas, to assist B. W. Winters in the construction of a fourth Gyro process converter.

* * *

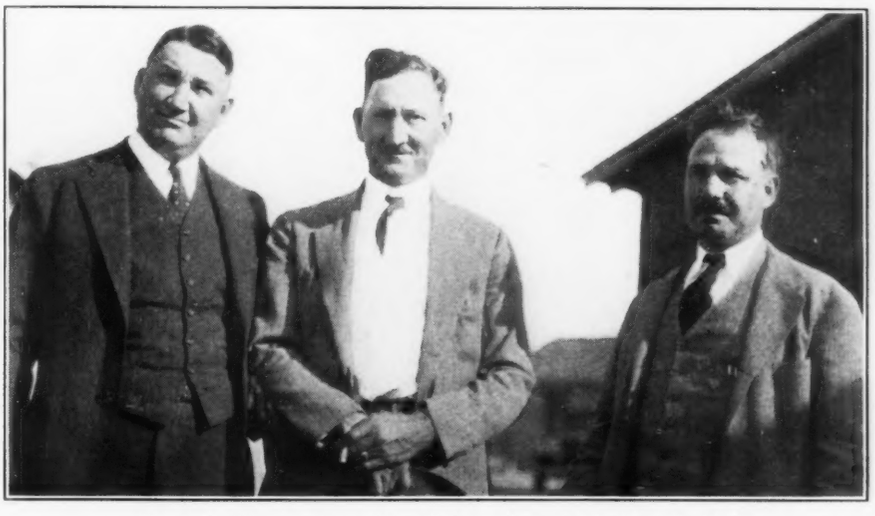
B. E. Hull, president of The Texas Pipeline Co., and the affiliated Texas-Empire Pipeline Co., is now president of the Association of Former Students of the Texas Agricultural & Mechanical college. He was a member of the Texas A. & M. class of 1904.

* * *

A. C. Marshall, recently elected assistant treasurer of the Union Oil Co. of California, Los Angeles, has been continuously in the employ of that organization since he entered it in a stenographic capacity in 1914, except for the time he served with the Ninety-first division in the World War. Mr. Marshall and J. M. Rust are the two assistants of Treasurer Keown.

* * *

J. J. Delaney, recently in Houston territory representing Westcott & Gries, Inc., has been made general sales manager of the Reliance Manufacturing Co., Alhambra, California. Mr. Delaney, who is a former president of the Southern California Meter



Carl A. Young, Ray W. Richmond and Walter H. Meir

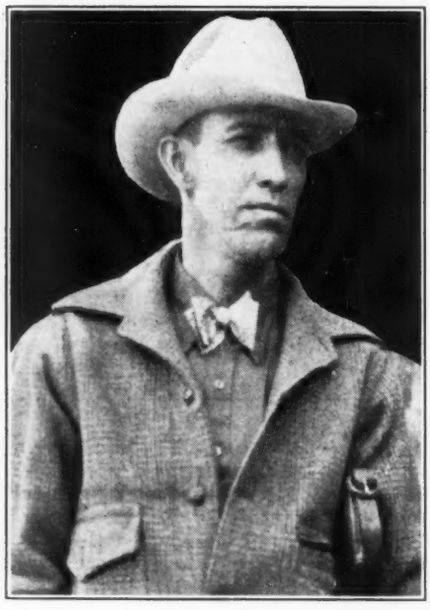
Association, was for several years superintendent of measurements for the General Petroleum Corp., now a subsidiary of the Standard Oil Co. of New York.

* * *

B. L. Laird, formerly land department head of the California Co., at southern division headquarters in Dallas, now occupies a secretarial position in the San Francisco headquarters offices of the parent Standard Oil Co. of California.

* * *

John T. Gay, who makes his headquarters at Wink, in West Texas, devotes his time to oil and gas operations of the Clint W. Murchison interests in the Permian salt basin region. The Murchison interests operate a gas company supplying West Texas towns with fuel from the Winkler area and also produce oil in the same territory through the Murchison Oil Co., with Dallas headquarters. Mr. Gay was engaged in the oil business in Mexico for years before going to West Texas.



John T. Gay

An organization of geophysicists engaged in petroleum research has been formed at Houston with Dr. Donald C. Barton as president. It is known as the Society of Economic Geophysicists. Dr. E. E. Rosairre of the Geophysical Research Corp., is vice president and John F. Weinzierl is secretary.

* * *

Chemists connected with the petroleum industry will be interested in a "robot" that mechanically analyses a flowing current, tracing on a sheet of recording paper a continuous curve representing proportions of oxygen and carbon dioxide. This mechanism was recently described at a meeting of the American Chemical Society by Professor W. F. Hamilton of Louisville

D. M. Wallace

University. The apparatus depends on two laws of physics, namely, the ability of air to carry off heat (conductivity, varying according to proportions of gases) and the ability of a fine wire to pass a current (electrical conductivity, varying according to temperature).

* * *

D. W. Moran of the Taft, California, offices of the United States Geological Survey, has recovered from a recent operation.

* * *

James Hutcheson, vice president and general manager, and M. C. McDowell, general superintendent, of the Rio Bravo Oil Co., Southern Pacific subsidiary, have returned to Houston after an automobile trip of inspection to all Texas producing districts under their jurisdiction.

* * *

Luther C. Turman, individual operator of Fort Worth, is one of the principals in the organization of the Independent Oil Producers Association of Texas as a branch of Wirt Franklin's national association. Mr. Turman, who operates in West Texas and in the Darst Creek field of the Luling fault zone, has been an active figure in the southwestern industry for years. Before divorcing their operations he was a partner of J. C. Maxwell in the old Fort Worth firm of Maxwell & Turman.

* * *

A. L. Bollens of The Texas Co.'s Fort Worth division geological offices has been transferred to the Midland district of West Texas. H. E. Munson, formerly in charge of sub-surface work in the Permian salt basin territory, has resigned to become chief geologist of the Alberta-Pacific Consolidated Oil Co., Ltd., with headquarters at Calgary, Alberta.

* * *

Hal J. Basham has been promoted to the post of assistant superintendent of The Texas Pipeline Co.'s Wichita Falls division. He was formerly Wichita Falls district foreman.

* * *

D. M. Wallace, formerly of Los Angeles, is in charge of Texas and New Mexico land operations for Geo. F. Getty, Inc., with offices in the Electric building at Fort Worth. Mr. Wallace is widely known in both the Pacific Coast and southwestern territories.

* * *

The Kahn Oil Co., founded 14 years ago at San Antonio by Morris A. Kahn, opened a new general office building on Roosevelt avenue in April. This marketing concern, which employs 18 persons, operates 14 cars and trucks and maintains storage facilities for about 25,000 gallons of petroleum products. Officials of the company, besides Mr. Kahn as president, are H. Wood, general manager, and Mrs. Myrtle Richardson, secretary.

* * *

Charles Cosby is now Maricopa Flats superintendent of the Rio Grande Oil Co.'s San Joaquin Valley operations. He was recently transferred from Long Beach, where he was succeeded by Earl Holmes.

* * *

H. Norman Snively is now doing geological work in the Black Hills region of South Dakota, maintaining offices in Denver. He is a graduate of Leland Stanford University, Palo Alto, and formerly was engaged in Pacific Coast work. Mr. Snively was at one time on the geological staff of the Standard Oil Co. of California, on the Pacific Coast, and later with the Union Oil Co. of California in Rocky Mountain territory.

* * *

Roy Welch is in charge of a newly opened Fort Worth office of the Louisiana Oil Refining Corp., Shreveport.

Luther C. Turman

Five Wells at Big Lake Produce At Depths Below 8000 Feet

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, May 1

DEPTH records for production continue to fall in the Big Lake field of Reagan county, West Texas, where two wells now produce high gravity oil from the Pennsylvanian horizon below 8520 feet.

The C-3 well of the Big Lake Oil Co., 2240 feet north and 920 feet west of the southeast corner of Sec. 1, university Block 2, is the deepest of the five that have made oil from the Pennsylvanian horizon in the field.

At 8572 feet, the C-3 was 49 feet deeper than the Texon—Group One (now Continental) discovery, completed Dec. 1, 1928, for 150 barrels, initial production.

C-3, which had its first pay at 8380 feet and tested seven barrels hourly at 8540 feet, where a fishing job resulted, is good for 78 barrels of oil and 2,217,000 cubic feet of gas daily at present depth. The B-1 discovery of the Texon—Group One interests now averages approximately 2860 barrels of oil and 27,243,000 cubic feet of gas daily, having steadily increased its production from the start.

The discovery well, maximum daily production of which was 2946 barrels of oil and 27,842,000 cubic feet of gas, has given up 2,225,000 barrels of oil all told.

The C-2 of the Big Lake Oil Co., completed several months ago, is flowing approximately 610 barrels of oil and making upwards of 11,500,000 cubic feet of gas daily. It is slightly shallower than the two record completions discussed in greater detail.

The Big Lake company's C-4, also of shallower depth, is producing approximately 125 barrels of oil daily and 4,275,000 cubic feet of gas; and the Continental's second completion, known as University B-2, blew in a few weeks ago making 150 barrels of oil and 16,000,000 cubic feet of gas at 8131 feet.

A sixth Pennsylvanian test still drilling is the deepest in the field. It is the Big Lake company's C-1, last reported in black shale and calcite at 8612 feet. It set 6-inch casing at 8000 feet, had oil and gas shows of noncommercial character at 8343 feet and a small show of gas at 8610 feet.

The high gravity of the oil, testing up to 61 degrees A.P.I., in the C-2 well, and 57 degrees, plus, in the B-1 discovery, has raised a question of its origin. Operators would like to know whether natural distillation of wet gas takes place underground in the process of exploiting Big Lake field wells or whether the oil comes from the pay horizon in the form it reaches the casinghead.

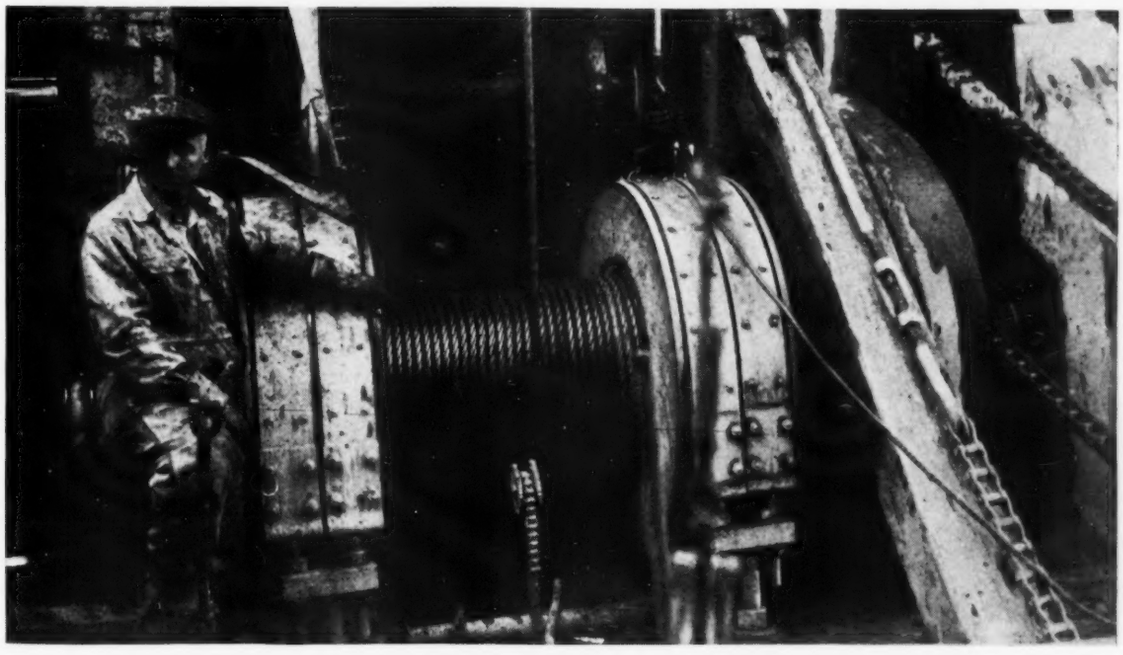
First theories that the discovery well was a "freak" were discounted when others began producing similar oil, but the failure of all save one of the subsequent completions to make large flows again raised the question.

Most of the deep wells have large footage of open hole at bottom, which might influence natural distillation of the high pressure gas.

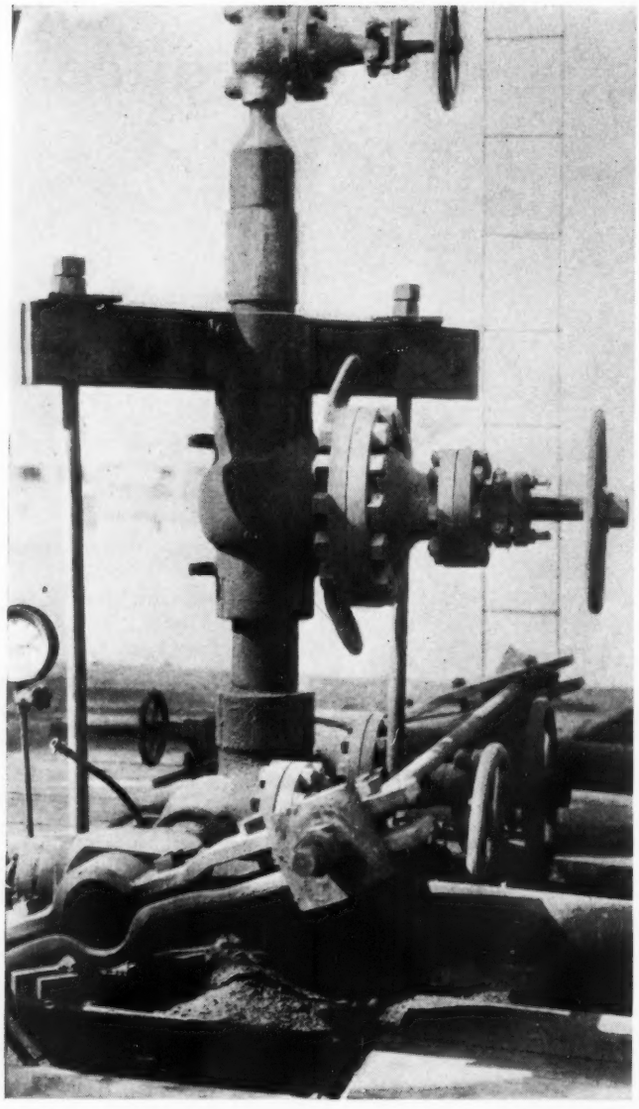
In the C-3 test, the deepest to produce in the field, 6⅝-inch casing was set at 6251 feet and 5-inch at 7806 feet. Drilling was continued below the casing seat with 4¼-inch open hole.

A first fishing job resulted after the 8380-foot pay had been drilled into last October. Gas blew the tools up in the hole, their top being measured at 8183 feet when the fishing job began. The ¾-inch wire line that had been used exclusively in drilling to the depths mentioned was cut above the socket with a rope knife and the upper part of the line fished out.

Inability to drive down the tools, which evidently had jammed part of the line into sides of the hole, caused all wire rope to be cut as near the socket as possible, after which a "blind



The drilling control on the Big Lake Oil Co.'s 3-C deep well. Note heavy wire line



Control head hook-up on deep producing well C-2 of Big Lake Oil Co.

box" was run. A combination socket was then used on ⅞-inch line to complete the fishing job.

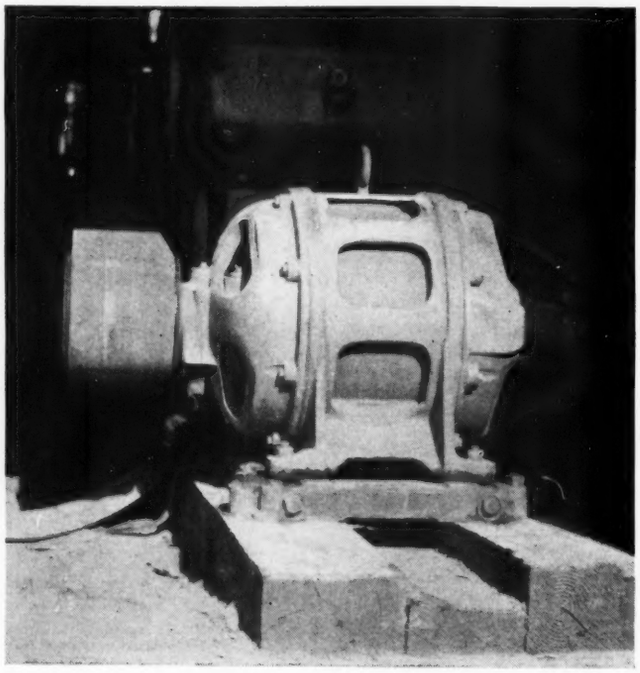
Deeper drilling was resumed after killing the well with water and baroid in November. It was drilled steadily to the depth of 8540 feet, where with 1500 pounds rock pressure the production was only seven barrels hourly. Another fishing job resulted at that depth, but this was soon out of the way. Drilling then proceeded to the present depth of the world's deepest producing oil well.

An acid-bottle test at 8500 feet showed the well only 2.75 degrees off vertical, indicating that depth does not necessarily and of itself make necessary the drilling of seriously crooked holes.

The C-1 deepest drilling well in the Big Lake field, which set 9-inch, 45-pound, casing at 6970 feet and 6-inch at 8000 feet, has been drilling since Feb. 20, 1929. At 8430 feet, it also was only two degrees off vertical. Drilling was changed from cable tools to rotary at 8343 feet.

Average drilling speed attained in the C-1 at the 8000 foot level was approximately 27 feet daily until the hole was loaded with fresh water, whereupon the speed was decreased to about seven feet daily.

The C-2 well, second largest producer in the field, is bottomed at 8232 feet, at which depth it came in Jan. 29, 1930. The 5 3/16-inch casing was set at 7939 feet and the hole is open to bottom.



Electrical motor on Big Lake Oil Co.'s C-3 deep well

In the C-4 test considerable trouble was experienced with heaving sand conditions, but finally it was completed at 8220 feet. Five and 3/16-inch casing was set at 7837 feet and there is open hole to bottom.

Detailed discussions of the Texon—group one discovery well and the mechanical aspects of its drilling were published in this periodical in 1928, shortly before it hit the deep pay in the Big Lake field and opened a new chapter in southwestern oil development.

New Heavy Duty Swivel For Deep Drilling

Cleveland—Oil Well Supply Co., Oil City, has designed and is now manufacturing its Imperial No. 150 swivel for drilling in excess of 10,000 feet. The large housing provides an oil bath of 10½ gallons capacity. All bearings work in this bath of constantly circulating oil, eliminating excessive heating and the possible withdrawing of the temper from the roller bearings.

The oversize roller bearings were especially designed for use in the swivel. The main thrust bearing is a Timken, with a capacity of 185 tons at 100 r.p.m. The upper thrust or auxiliary bearing, also a Timken, absorbs all shocks or upward thrusts of the swivel body. This bearing has a thrust capacity of 20 tons at 100 r.p.m. and is adjustable from the outside of the swivel.

A radial thrust bearing is a heavy duty American bearing of 40-ton capacity at 100 r.p.m. and absorbs all the radial thrust due to the whipping motion of the drill stem, preventing undue wear on the stuffing boxes and packing.

All stuffing boxes are deep and outside packed, and have bolted glands, eliminating threads which cut and shorten the life of the packing. The water tube stuffing box is especially deep. The body is bored from a solid forging. The flanged water tube is also bored from a single forging, and is pack-hardened, ground and polished to reduce wear on the packing to a minimum.

A heavy 4-inch bail, reinforced to 5 inches in diameter at the loop, is forged closed over the 6 inch trunnions. Subsequent spreading of the bail is prevented by steel bail guard plates. The trunnions and two sets of bail rests for hanging the bail at angles of either 45 degrees above or 45 degrees below the trunnion, are cast integral with the housing.

The normal rated capacity of the Imperial No. 150 rotary swivel is 150 tons to 100 r.p.m.

New Production in Western Kansas Encourages the Wildcatter

By William F. Lowe
N. P. N. STAFF WRITER

TULSA, May 1

THINGS are looking up in western Kansas. It is not so long ago, perhaps a little over six months, that producers looked askance at the territory and skeptical predictions were the only kind that were heard. Some of the pessimists are still with us but the performance of several wildcats in that part of the state has made believers out of many doubters. Production has been found in respectable quantities in several places and a little more drilling of the "feeler" type may result in the location of real pools.

Two such producing areas have already been found and others are threatening, as the Siliceous lime has proven itself accessible and oil bearing. At the present time it is rather difficult to say what the first two, the Sellens area of Russell county and the Raymond pool of Rice county, may eventually do. Neither has been developed beyond the original four offsets though both have fairly impressive production records. In this respect, the latter seems to have quite an edge on the Sellens pool.

Their principal claim to fame lies in the fact that they were the first Siliceous lime pools in the western part of the state. Both began as Chat pools but in the early months of this year the wells were all deepened a few feet to the lower pay and their initials averaged around 400 barrels. Beyond their first swabbing tests little is known concerning the real production capacity of the Raymond wells, though they indicate potentials in excess of 1000 barrels. They have been prorated to 50 barrels per day each. This condition probably is due to be changed in the not distant future as other wells are drilled and pipelines are brought in to take the oil.

The Sellens pool of Russell county is a little more fortunate in this respect and a small pipeline is taking nearly 800 barrels a day from the five producing wells. Most of the acreage in both pools is held in large blocks, with the Prairie Oil & Gas Co., Independent Oil & Gas Co., and T. B. Slick owning the major portion. For this reason the development may be a little slow but there is no question that the pools are of major importance as they now stand and may develop into large producing areas.

Ness and Barton are the only other counties in the western part of the state where oil has been found in the Siliceous lime. These developments have all been of comparatively recent date and though they are not quite as spectacular as those of Russell and Rice counties, they indicate certain very encouraging possibilities.

In Ness county, the Barnsdall Oil Co., No. 1 Lonk, 35-18-21W, topped the Siliceous at 4625 and has a small show. A better pay was found above in the Mississippi lime however, between 4175 to 4201, from which the well swabbed 112 barrels of 41 gravity oil on a 24-hour test.

The Continental Oil Co., No. 1 Aldrich, 25 miles west, in 7-18-25W, did not log the Mississippi lime at all but went into the Siliceous direct from the Pennsylvanian. The pay was a dolomite from 4428 to 4430 and is good for only about three barrels per day.

IT IS interesting to note how the pre-Pennsylvanian section, as found in the eastern part of the state, has thinned out toward the west and north. The logs of the two wells mentioned above afford an illustration of this fact, as the Mississippi lime produces in the one and is entirely missing in the other. This might very possibly be due to erosion on local structure. But since the Siluro-Devonian beds are very generally thought to have been laid down in overlaps, from the south and east, on the southward dripping Ordovician, local erosion does not seem a logical reason.

A similar condition exists between the Raymond and Welch pools in Rice county. In the latter, a Chat area on the east side of the county, a goodly portion of the pre-Pennsylvanian section is present, while in the former there is but a trace and the production is immediately below the Pennsylvanian in the Siliceous.

The discovery of this sequence of beds in the western half of the state has been responsible for much of the present drilling. At least it offered considerable encouragement, for it indicated that the large producing horizons of the east and of Oklahoma would be more accessible than was first anticipated.

In Barton county, the No. 1 Davidson of the Prairie Oil & Gas Co., NW SE 4-16-11W, topped the Siliceous at 3314, finding a 200-barrel pay from 3332 to 3340 TD. The well is pumping that amount of oil now but is also showing a little water. Its location may indicate either an extension to the southeast of the Sellens pool of Russell county, or an entirely new area on another local high.

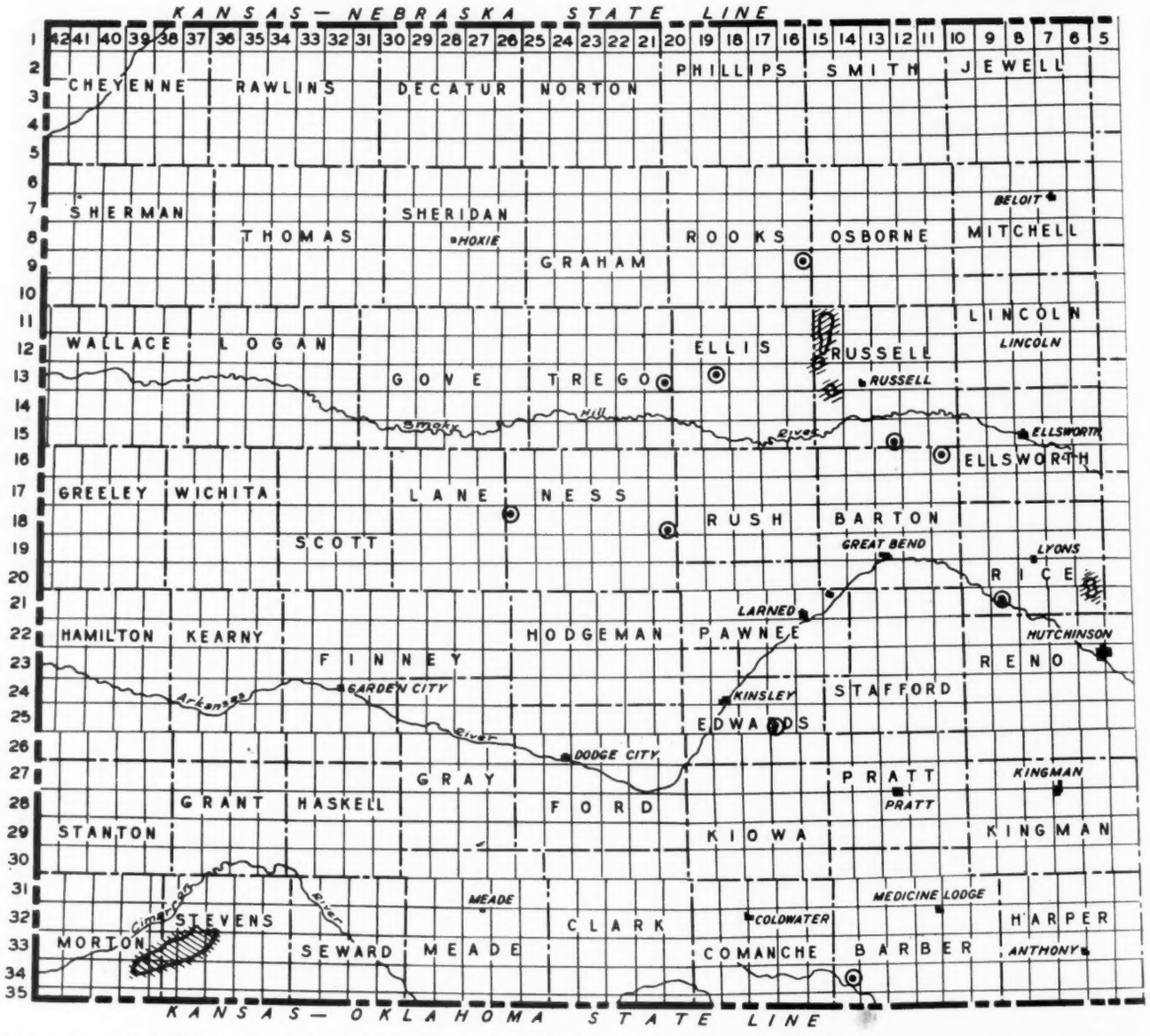
THOUGH the present production of the Siliceous lime pools is not particularly impressive, indications are that along their north-south trend somewhere, may be other locations of greater value. The Raymond pool seems already to have the characteristics of a major producing area even though the initials of the wells were not very startling.

Edwards county ranks next in importance, from the standpoint of present production, with two wells making a total of 250 barrels a day. The discovery well in the county was the British-American No. 1 McCarty, 31-25-17W, which was drilled in last October. It is now pumping about 60 barrels a day and has been making gas in commercial quantities since its completion.

Offsetting this well on the east, a recent completion of the Barnsdall Oil Co., is thought to be good for about 200 barrels on the pump. Both wells have their pays in the erosional zone at the base of the Pennsylvanian, the former at a total depth of 4571 and the latter at 4546.

A little over two miles northeast, the Dixie-Amerada, No. 1, SW SW 22-25-17W, found 10,000,000 gas in this horizon at 4480 and water from 4590 to '92. Drilling is to be continued however. In the well of the Skelly Oil Co., three-quarters of a mile west of the above gaser, in the NE SW 21-26-17W, the base of the detritus was found at 4517 and it contained neither oil nor gas. Considerable water was found in the Mississippi lime at 5045 and is now being cased off.

A comparison of the depth at which the pre-Pennsylvanian beds are found in these wells with that of the counties on the north, is interesting. It



Map of western Kansas showing the location of producing areas. Cross-hatched areas represent older pools, as the Fairport and Gorham pools of Russell county and the Welch pool of Rice county. The one exception to this is found in the southwestern corner of the state where the new gas field of Morton and Stephens counties is so shown. The circled areas are those of comparative recent discovery and in some cases represent but one well

very clearly indicates how sharply the lower strata dip away to the south and southwest into the basin of western Oklahoma. The deepening of the wells in Edwards county will be closely watched, both by geologists and producers, the one for the lower section and the other because of what the Wilcox or "Siliceous" may contain.

Production in the wildcats of Rooks county is arratic and disappointing. Here in the north the sedimentary upper beds rest directly on the granite which is found at less than 4000 feet over most of the county. Even some of the lower Pennsylvanian is missing. The producing horizon, known locally as the Oswald, is correlative with the Lansing and is about the same zone of limestones in which the oil is found in the Fairport Pool of Russell county.

Only two wells are considered commercial producers at the present time. The Vickers Petroleum Co., No. 1 Zuhrman, 11-9-16W, is making about 27 barrels per day from several small lime pays in the Oswald from 3200 to 3325. In the same section, Krueger et al. are obtaining a daily average of between 30 and 40 barrels from their No. 1 Tatkenhorst. Both wells have initials above 100 barrels but the decline was very rapid.

Another such flashy producing area was found in Reno county by the Skelly Oil Co., with its No. 1 Smith, 24-24-8W. The pay was in a sandy phase of the Oswego lime from 3540 to 3544 and the first 24-hour gauge was over 600 barrels. Two days later this figure had dropped below 100 barrels and the present output is about 25 barrels a day.

Trego county has one producer in the well of the Central Commercial Oil Co., in 20-13-21W. Originally thought to be in the Wilcox sand, it was completed at a total depth of 3972 for an initial of 200 barrels. There still seems to some question as to just what the producing horizon really is though it is generally believed to be the erosional zone at the base of the Pennsylvanian. The well has a present daily average of 23 barrels.

Several commercial gas areas have been found in the western half of the state though the southwestern corner counties are the only ones that are being developed on a large scale. In this area, Stephens and Morton counties have gas fields of major proportions and the Moody-Seagraves Corp., has completed a number of wells and is drilling 23 others. Stephens county is getting the biggest play and the average volume per well is about 14,-

000,000 cubic feet. A large pipeline is being built into the area to take the gas to northern and eastern markets.

Though western Kansas still has some tricky structures, its outlook from a production standpoint has considerably improved in the last few months. The coming summer will see operators moving into new areas and some of the newly found pools will be developed.

Selection and Application Of Pump Packing

TULSA, April 30

FIELD men and plant operators, in discussing pump packing, have come to the conclusion that the condition of the pump, correct installation, and the proper selection of the packing are the three cardinal points which the superintendent should keep in mind when contemplating repacking his pumps.

The field and plant men of one major company, brought together to discuss their mutual problems, agreed that for reciprocating pumps handling hot mineral seal oil a combination set consisting of two square braided metal rings for end rings and Center rings of square braid, over braided pure asbestos yarn packing were to be recommended.

For reciprocating pumps handling gasoline the closely woven spiral form of packing made of duck, with a rubber friction binder, was the choice of most of the men.

The following choices of packing for stuffing boxes on plant pumps were registered. For centrifugal hot and cold water pumps, the square braided coil form packing, made of long fibre asbestos yarn, graphited and lubricated; for centrifugal gasoline pumps the same packing can be used as for the hot and cold water pumps, although a different lubricant is needed; for centrifugal hot oil pump service the square braided, closely woven asbestos yarn and duck packing with the outside covering holding the asbestos yarn and duck firmly and compactly; centrifugal pumps handling acid can use the square coil form, plaited up solidly, and treated with acid resisting lubricant.

In discussing the correct installation of the packing the field men pointed out that, if the packing is in coil form and of correct size, it should be placed around the rod and the cut so made that the ring will fit exactly, and the ends not run short, nor overlap.

Although it was generally agreed that the cuts should be staggered, it was also generally agreed that they should be as close to the top of the rod as possible. When the packing ring is placed in this manner, it was said, the solid part of the ring was at the bottom of the rod, where most of the wear occurs.

After enough rings have been cut, and inserted in the box the gland should be tightened up with a wrench until the packing feels snugly in place. It is then extremely important, it was said, to back the gland off and reset it by making up the adjusting nuts with the fingers. There are times, even when the gland is set in this fashion, when it will be too tight, after the pump has been in operation an hour or so.

Tests on the expansion of good grades of half-inch hydraulic packing have shown that one ring will expand ⅛-inch at the temperature of boiling water, it was stated. Translated into pump conditions, this means that four such rings on a piston would need a total of one half inch expansion space left between the followers and the rings. Followers have been known to break several days after the pump had been put into operation simply because insufficient expansion space had been left for the packing.

But the best packing in the world, applied with all the care and experience possible, won't wake a good pump out of a worn out unit. If the rods, stuffing boxes, glands and liners are badly worn, they should be replaced. The men who run them felt that it was impossible to keep pumps packed and running efficiently if these parts were worn out.

It was not considered good practice to put one or two new packing rings in with the old. All the old packing should be removed, it was said, and the stuffing box thoroughly cleaned out.

Gas Lift Safety Methods

TULSA—Certain safety precautions to be observed at compressor plants require re-assertion from time to time. Every little while something happens in a gas lift or repressuring plant that causes much damage and occasionally personal injury. Often as not a careless or forgetful workman is responsible.

In the course of his remarks on "Safety in Repressure and Air Lift Work" before the recent meeting of the National Safety Council in Kansas City, Raymond M. Carr, chief production engineer of the Sinclair Oil & Gas Co. said:

"If it is necessary to change over from gas to air, or vice versa, in a lift plant all pressure should be released and the lines and compressors purged thoroughly before pressure is built up again. Gas lines should be removed from the vicinity of the air intake. If the intake is through a scrubber tank and a 'change over' is made, any gas lines should be disconnected and taken away from the tank. It is not safe to trust a gate or stop. They may leak and cause an explosion. If the compressors are running at high pressure on air the lubrication should be watched carefully as excessive oil may cause an explosion. If exceptionally high pressures are required using air it may be necessary to use soap solution or even water as a lubricant.

". . . . Many repressuring plants are operated by the pumper on the lease. It is a wise precaution, therefore, to provide the engine with automatic devices to shut it down should the oil or water circulation fail. These devices need not be expensive nor complicated. Frequently one sees a shut down arrangement which consists of nothing more than a wire, a pulley or two, a weight and an oil pail full of holes. The pail is suspended in such a manner that the cooling water discharges into it and keeps it overflowing. The wire runs from the pail to the lever on the gas throttle on the engine and the weight of the pail full of water is just sufficient to hold up a weight attached to the lever. Should the cooling water fail to circulate the pail soon becomes empty and the weight drops, closing the throttle.

"There is a device on the market to assist in handling air-gas mixtures. It operates on the same principle as the soft plug in a boiler. The device is attached to the discharge end of a compressor in such a manner that any rise in temperature above a pre-determined point causes the soft plug to melt and a slug of water is shot into the discharge line forming a quantity of steam. At the same time the ignition is short-circuited stopping the engine. These devices are in use in one of the largest repressuring plants in northeastern Oklahoma."

Sweden imported 340,000 barrels of crude, 915,000 barrels of gasoline, 365,000 barrels of kerosene, and 8,500,000 pounds of paraffin wax from the United States in 1928, all being the largest amount of these products it imported from any other country. Great Britain was our nearest competitor, it exporting 235,000 barrels of crude to Sweden, some 800,000 barrels of gasoline, 150,000 barrels of kerosene, and 112,000 pounds of paraffin wax.

New Refining Patents

Liquid Phase Cracking. U. S. P. 1,752,004, March 25, 1930, John B. Jaqua.

USE of liquid heat transfer mediums to avoid local overheating of cracking coils or stills is known; but it has been considered preferable to use for this purpose fused metals for suits on account of their thermal stability. This invention is an advance over previous methods of liquid-bath heating of cracking units, in that it makes possible the use of a heavy oil. Thus a cheap heating medium is provided, and one which can itself be gradually utilized in the cracking process.

To accomplish this, a relativvely stable thermolyzed oil is chosen as the heating medium; the oil to be cracked is heated nearly, but not quite to the cracking temperature and is subjected to successive small increments of heat from the more stable oil, which is heated slightly above the cracking temperature.

The oil used as heating medium may be gas oil 'bottoms' or other cheap oil, and may be such that it is itself gradually cracked. Apparatus is specified which provides a system of interconnections permitting the lighter fractions to be taken off from the heating medium along with the volatile products from the cracking stock.

This system not only effects economies in the cost of heating medium, but also constitutes an improvement in the act of protecting the cracking stock from local overheating, so that carbon disposition is minimized.

* * *

Filtering Gasoline. U. S. P. 1,752,709, April 1, 1930, Berry V. Stoll, Assignor to Stoll Oil Refining Co.

IT HAS been found that by attaching a filter to the outlet pipe of a condenser, so that the gasoline is filtered while cold and freshly distilled, but without contact with air,, a product can be obtained which remains sweet and light-colored indefinitely, without acid purification.

This is an improvement over previous proposals for passing the gasoline fumes through a filter before the condenser, in that cold filtration gives much better results than hot filtration. Further advantages of the new invention are that it permits filtration of the gasoline under pressure, and that alkali treatment (if necessary for desulfurization) can be effected during passage of the gasoline from the filter to the reservoir.

Tests show that gasoline treated in accordance with this process has a high anti-knock value, will not go off-color, and will remain sweet during long periods of storage. Apparatus is specified, in which the gasoline vapor passes from the fractionator through a condenser, a filter, a mixer for alkali treatment, and into the storage tank. For low-sulfur gasoline which do not need the alkali treatment, provision is made for bypassing the filtered gasoline directly from the filter into the storage tank.

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Catalytic Gasification of Oil. U. S. P. 1,752,692, April 1, 1930, Alexander S. Ramage, Assignor to Ozonide Corp.

THIS invention provides a means of obtaining a high yield of combustible gas from paraffin-base crude oils, with formation of aromatic hydrocarbons suitable for motor fuel. A particular feature of the improvement is the use of a small admixture of steam to the oil vapor to be gasified; this facilities control of the yield and the proportions of olefines in the gaseous product.

The process is very flexible; the volume yield and heat value of the gas can be varied within rather wide limits by adjusting the severity of the treatment according to the products desired. Thus, a yield of about 300 cubic feet of gas per gallon of oil may be obtained, the gas having a heat value of 550 B.t.u. and consisting mainly of methane, hydrogen and carbon monoxide. With increasing severity of treatment, the ethylene yield can be increased; in this case the heat value decreases but the volunme yield increases.

Ferric oxide is used as the solid catalyst of gasification, in conjunction with finely powdered metallic iron. In a preferred embodiment of the invention, 4 series of tubes set in manifolds are used, 2 containing ferric oxide and 2 containing iron powder. The effect of the small admixture of steam is to prevent cracking and reduction beyond the olefine stage. Severity of the treatment is controlled by adjusting the temperature and velocity of the vapors passing through the gasification tubes.

* * *

Simultaneous Fractionation and Purification. U. S. P. 1,752,455, April 1, 1930, Albert G. Peterkin, Jr., Assignor to Atlantic Refining Co.

IN CURRENT refinery practice, crude oil is first separated into fractions, and these fractions are treated as may be required for removal of sulfur and other impurities and for improvement of odor and color. By a suitable application of solid treating agents, this invention has succeeded in combining in one operation the fractionation and certain purification treatments.

This is accomplished by introducing the solid refining agent into the fractionating column as a suspension of the solid in the reflux liquid. The suspension, flowing counter-current to the ascending vapor, effects fractional separation of the vapor and at the same time removes therefrom the objectionable impurities. The solid reagent is chosen according to the particular purification effect which is desired, e. g color stabilization, deodorization, desulfurization, etc. Suitable agents include fuller's earth, active carbons, bauxite, clay and the like (adsorbents), and chemical agents such as the oxides of copper, lead, mercury, etc.

In carrying out the invention, the solid agent is made up into a slurry with reflux liquid, and is introduced either at the top of the fractionating column or at any suitable intermediate point. It is preferred to use a fractionator of the plate and bell or bubble type. To illustrate the procedure to be followed, a detailed description is given of the application of the new method to a mid-continent crude, A. P. I. gravity about 35 degrees. This crude is separated into lamp oil, gas oil, paraffin and high viscosity distillates, each of which is refined during fractionation, by contact with a mixed suspension of fuller's earth and copper oxide in the reflux liquid.

The particular advantage of the invention is that each distillate, as it passes from the fractionator to the storage tank or other destination, is substantially free from objectionable impurities, so that the expense of further refining treatments is saved.

ADVERTISING PAGES REMOVED

Modern Refining—Science and Practice

By Colonel George A. Burrell*

Article 22

Evaporation Losses from Tanks

The relationship of vapor space in tanks to losses; Construction of tank roofs; Vents and breather valves; Various types of tanks designed to minimize losses; Effects of painting with various colors; The gasoline recovery plant.

OTHER conditions being fixed the amount of breathing in a tank is proportional, but not directly, to the vapor space therein. For this reason they should be filled as full as possible, leaving only enough room for expansion of the oil. Six inches is enough in most cases.

A 55,000-barrel tank, one-half full, will contain about 150,000 cubic feet of air and vapor. At a temperature of 80 F. the air may hold approximately 30,000 cubic feet of gasoline vapor, or about 1000 gallons. If this air-vapor mixture is heated 30 F. by the heat of the sun it will expand to about 166,500 cubic feet or 11 per cent, and 110 gallons of gasoline will be expelled per day say, from the tank, or about 0.01 per cent of the oil (27,500 bbls.). At night the air-vapor mixture in the tank cools 30 F. again, say, and draws in more air. This saturates itself with gasoline again from the crude oil, and next day when the sun again warms the tank another 110 gallons of gasoline are lost.

This is a yearly loss of 3.65 per cent of the crude oil, or say 12 per cent of the gasoline in the crude oil. Of course the amount of gasoline lost each day is slightly less than that lost on the preceding day, for the crude oil in gradually losing its gasoline becomes lower in vapor pressure all the time and there is required less gasoline to saturate the air. It is also true that the air-vapor mixture will often be heated very much more than 30 F. by the heat of the sun.

The amount of gasoline vapor that air in the vapor space of a tank will contain, and the amount of expansion and contraction that the mixture undergoes, will vary from top to bottom and from the outside to the center of the vapor space. The top of the tank is the hottest and the walls are hotter than the center, due to the heat of the sun shining on the roof and walls. Hence the air-vapor mixture is hottest at the top, but that over the surface of the oil contains the most gasoline, for here the oil and vapor are in direct contact. The longer the air-mixture remains in the tank, due to little or no breathing, the more uniform in temperature and in gasoline content the mixture will become, eventually approaching a condition of equilibrium with the liquid below it.

Breathing is not in proportion to voidage (vapor space) in a tank because of the temperature difference at the top and bottom of the space. Thus a tank almost full of oil will breathe more than a direct ratio between the sizes of the vapor spaces will show.

Breathing of tanks can be greatly diminished when they can be connected in batteries through a manifold. Thus in pumping into one tank of the group vapors and gases are pushed into other tanks, and in pumping out the vapors and gas reverse the flow.

Actual Amount of Air-Vapor Given Off From Tanks, and Its Gasoline Content

The amount of air-vapor discharged from a tank will vary with the type of oil in storage, the temperature changes and character of the tank. By adopting modern methods of making tanks tight, and thereby avoiding windage, only the factor of breathing need be considered. This assumes tanks that are kept under a pressure of one-half ounce or less of pressure and equipped with breather valves. Not many pressure tanks are in use.

Under these circumstances the loss of gasoline will vary, according to the investigations cited herein and the writer's investigations. One-half of one per cent of gasoline loss per day is probably a fair figure to use for tight and well equipped tanks, to estimate losses and possible recoveries in a vapor recovery system, say.

The amount of air-vapor discharged in 24 hours may be safely put at roughly the volume of the tank itself. But most of this comes off over a relatively short time, say four hours. Hence vapor lines and a gasoline recovery plant must be built to handle this peak load. One company estimates the amount of air-vapor coming off in 24 hours as that due to a rise in temperature of 20 F. per hour plus 30 per cent gasoline vapor accretion.

Construction of Tank Tops

Tanks are now built of lower roof pitch than formerly was the case. Thus the vapor space is reduced. A slope of ½ inch to 1 foot is enough to adequately drain the roof. In this case the minimum vapor space due to roof construction is decreased, and in a full tank the air-vapor volume is reduced to a minimum.

Vents and Breather Valves

Only one vent should be used on a tank. If two are provided the wind blows through one and out the other, expelling its proportion of gasoline.

One frequently sees a long vent pipe extending to the ground to carry off vapors. This is dangerous practice for the heavy vapors collect and roll along the ground subject to many sources of ignition. This is done on the theory that vapor from a vent in

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the top of the tank rises in a column or stays on top of the tank more or less localized and attracts lightning. But vapors do not attract lightning and neither do they rise in a column or remain concentrated on tank roofs. They become dissipated.

Many tanks are today protected by means of vacuum and pressure relief valves set at a safe working pressure for the tank roof in question. They usually open or shut at a pressure of less than one-half ounce of water per square inch, but even so have reduced evaporation losses to one-half or one-third of that suffered without them. However, it is a serious matter if they fail to open at the proper pressure, resulting in a bursted roof, hence they have to be carefully selected.

Proper tank valves must have flow capacity enough to empty the tank of gas at the maximum rate of flow permitted by the tank connections and piping without imposing a dangerous vacuum or pressure on the tank. They should not leak, corrode, stick, freeze, and must be readily observable, tested, and repaired. Gasket or soft seats often disentegrate, and weighted springs weaken.

Where a battery of tanks is connected to a vapor recovery system sensitive and positive regulation by means of proper valves becomes highly important. Normally the flow through them is but a fraction of that when peak loads are thrown on the valve, and the valves must not only handle the normal flow, but adequately dispose of the peak flow. Less than an inch of water pressure and a corresponding vacuum is normally carried on the tanks. More than this demands an expensive tank. High vacuums are not necessary to remove the vapors. The suction line should preferably rest close to the surface of the oil, thus the tank atmosphere sweeps the oil surface and picks up the heavy vapors which rest over the oil surface.

Liquid seals, mercury, oil, etc., are frequently used to make tanks or valves tight against a slight pressure or vacuum. Water has a tendency to collect in the seal and freeze, remaining undetected frequently for some time, so that damage to the tank results.

Pressure Tanks

Pressure tanks in small sizes are common. They are effectively used in great numbers in the natural gasoline industry, securely locking the gasoline against any vapor loss whatsoever, except as the gasoline is transferred and exposed to the atmosphere, but as the size of the tank increases the expense of building the tank increases, so that it is seldom that tanks of greater capacity than 10,000 barrels are built to withstand more than 18 pounds per square inch. Spherical tanks of this capacity and pressure are built to hold casinghead gasoline.

The extreme in high pressure, high capacity tanks, are some of 80,000 barrels capacity, built by the Standard Oil Co. of New Jersey, and equipped with breather valves that open at 13 inches of water pressure. A dome roof tank was constructed that cost little more than a standard cone roof tank. Vapor losses were practically eliminated. They cost about $3300 more for a tank 117 feet in diameter.

Another company built 80,000 barrel tanks with dome roofs that withstand a pressure of 1.25 pounds per square inch. A one pound pressure release valve will hold pressure on tanks for approximately a temperature rise of 4 to 50 degrees F.

Character of Vapors from a Tank of Natural Gasoline

Delaney[1] has shown the composition of the vapors from a tank of natural gasoline of 87.4 A.P.I. gr., I.B.P. 46 F., end point 330 F. and recovery 77 per cent. The loss on distillation was 22.3 per cent.

	Per cent
Air	0.0
CH_4 and N_2	4.7
C_2H_6	12.2
CO_2	.7
C_3H_8	32.1
C_4H_{10}	44.0
C_5H_{12} and heavier	6.3
Total	100.0

Vapor Tight Tanks

These tanks are fitted with steel roofs with the seams electrically welded. Gas tight appliances such as stuffing boxes for swing pipes, cable and gas tight hatches are used. Each tank is fitted with pressure and vacuum relief valves. These vapor tight tanks probably offer the most effective means of reducing evaporation losses consistent with the expense involved.

Floating Decks

This is a deck developed by J. H. Wiggins and placed over the oil in a storage tank which follows the level of the oil as it rises and falls, thus reducing to a minimum the amount of vapor space between the oil level and the roof. In the Wiggins roof the evaporation area is reduced on a big crude oil tank from 170 square feet, the full surface area to 15 square feet; the narrow space between the tank walls and the wall of the roof. Escape of vapors is provided through a mercury seal that opens at one-fourth ounce pressure.

The fire hazard is also reduced because of the small amount of exposed vapor space. A difficulty connected with floating roofs has been equipping them with a drain that will function at all times. Some companies have felt compelled to build the regular roof in addition to the floating one. This also keeps snow and ice off the floating deck. Another disadvantage is that the floating decks get hot and in contact with the oil imparts this heat thereto, so that while the evaporating surface is smaller it may be much hotter than in tanks without floating decks; in fact the temperature may exceed that of the initial boiling point of the oil. In that event losses are large.

However, Schmidt determined that the filling loss using a floating roof could be reduced from 0.17 to 0.04 per cent when filling a tank with 62 gravity gasoline. Wiggins[2] states that a 500-barrel stock tank may, when filled, lose 37 gallons. He finds[3] that a floating roof may reduce the loss per year from a working tank handling 40,000 barrels of crude oil per day, from 16,000 barrels per year for a gas tight roof tank to 100 barrels per year for a floating roof tank.

Breather Bags

These bags were developed by R. E. Wilson and associates of the Standard Oil Co. of Indiana. The bag, made of fabric more or less impervious to gasoline vapor, is housed in a separate building, big enough to hold the inflated bag, and connected to a tank or tanks. As the tank expels its vapor-air mixture, the latter fills the bag. When the mixture contracts (say at night) it goes back into the tank. The bags are kept as near atmospheric pressure as possible. It was determined that an 80,000-barrel gasoline tank will exhale 6000-7000 cubic feet of air-vapor on an average summer day, carrying away 250 gallons of gasoline; further, that evaporation losses could be reduced from 0.25 to 0.04 per cent by using the bags. The first cost of these bags is high. They have only come into limited use.

Vaporless Tank

The Fleming vaporless tank has no vapor space and the surface of the oil is protected by an inverted water seal which allows expansion and contraction of the oil. It only fulfills its function when the tank is full of oil. Otherwise a vapor space forms, which on contracting or expanding, blows the seal.

Insulated Roofs

Some refiners cover their tank roofs with insulation. The initial cost, while fairly high, is justified in the saving effected. With insulated roofs the tank is kept at a fairly uniform temperature. High temperature peaks are avoided. They can be used to supplement vapor tight roofs in fields where corrosive gas (hydrogen sulfide) rapidly eats through a roof. These roofs probably save about 50 per cent of the loss over a bare steel roof. A good combination is one of

[1]Before Cal. Nat. Gasoline Ass., Sept. 15, 1927.

[2]Pet. Age, Aug. 15, 1924, p. 16.

[3]NAT. PET. NEWS, 20, 42, 112 (1928).

breather valves, minimum vapor space, and insulation.

Wiggins Breather Roofs

Wiggins has also developed a roof called a breather roof for the tops of oil tanks used for standing storage. The roof plates are welded together so as to form a great diaphragm. When the tank is being filled the air in the tank is vented through a volume relief valve in the roof. After the tank is full and when the temperature of oil rises due to the heat of the sun, the roof rises enough to provide the increase in volume required. The variation in volume is made great enough to take care of somewhat more than 33 per cent expansion on tanks filled with one and one-half feet of the top. This type of roof is recommended for standing storage and saves most of the loss; 96 per cent or more. For working tanks the Wiggins floating roof is recommended by the makers.

These breather roof tanks are said to be effectively used in Texas for storing high sulfur crude oil to the end that corrosion of the under side of tank roofs is reduced. Corrosion was found to be due to air breathing into the ordinary tank followed by condensation on the tank roof of water contained in the air. Sulfur in the oil and water on the roof brought about an acid condition which attacked the roof. In using the breather roof no outside air enters the tank, except a small amount originally present.

Painting Tanks

Many tanks are painted a light color, white or gray, to reduce evaporation losses. Light colors reflect the heat and dark ones absorb it. In a gasoline tank painted black, the vapor space during the coolest part of the day may have a higher temperature than the highest temperature reached during the day by an aluminum or white painted tank.

The rate of heat absorption for different colored tanks follows:

Aluminum	20.5
White paint	22.5
Black paint	54.0

Ludwig Schmidt[4] has determined evaporation rates of crude oil placed in different colored tanks. Four 55,000-gallon tanks were selected, filled with fresh crude oil, and the evaporation losses over 1 years time noted, as follows:

	Per cent	Loss in Gravity °A.P.I.
Black tank	1.24	0.6
Red tank	1.14	0.5
Gray tank	0.99	0.3
Aluminum tank	0.83	0.2

Moir[5] cites tests made by H. A. Gardner of Paint Manufacturers Association of the United States on the effect of color of a container on the rise in temperature of gasoline when subjected to rays from a carbon arc for 15 minutes, as follows:

	Rise in Temperature °F.
Tin plate	19.8
Aluminum paint	20.5
White paint	22.5
Light cream paint	23.0
Light pink paint	23.7
Light blue paint	24.3
Light gray paint	26.3
Light green paint	26.6
Red oxide iron paint	29.7
Dark prussian blue paint	36.7
Dark chrome green paint	39.9
Black paint	54.0

Also the temperatures and evaporation losses of naphtha when exposed to the sun for two hours in small colored tanks two-thirds full, as follows:

Color of Tank	Temp. of Naphtha °F.	Loss of Naphtha by Volatilization
Black	111	9
Bright red	109	8
Dark red	108	8
Dark green	108	8
Battleship gray	106	6
Tan	104	5
Red primer—white top coat	102	5
Cream	102	5
Pale blue	102	5
White	100	4

As regards the use of the light colored paints, aluminum and zinc oxide, it has been stated that aluminum paints are most effective in preventing evaporation in bright sunlight and zinc oxide paints are the best at night, and somewhat better over the entire 24 hours.

Spraying Tanks

Evaporation losses can be reduced by spraying tank roofs with water. In addition to the cooling effect because of colder water, additional cooling is brought about by the water evaporating. Some refiners cool their gasoline run down tanks by hanging blankets on them, keeping the blanket partly soaked with water to cool the tanks by evaporation from the blankets. However, few refiners seem to have water in excess supply for tank spraying purposes.

Water Top Tanks

Tanks equipped with water tops never became popular, although they help reduce evaporation losses. The first cost and maintenance costs are considerable. Further, the walls of the tank have to withstand an additional load, and in case of a fire may collapse.

Evaporation Losses During Tank Car Loading

In modern installations a special dome cover is used in loading gasoline into tank cars. The cover is fitted with a line that goes back to the gasoline recovery unit of the refinery. The car is loaded under just enough pressure to force the vapor back. Older practice in loading tank cars was to insert the loading line just inside the dome, letting the gasoline splash to the bottom. Needless to say this results in the loss of a great deal of gasoline due to air currents carrying the gasoline out. A better practice is to fit the loading line with a sleeve, dropping the latter to the bottom of the car so there will be no splashing of the contents of a car.

Evaporation Losses During Treating

Old practice was to blow air up through an agitator to mix the contents of same. Later practice was to circulate the contents from the bottom of the agitator through a pump and back over the top. Schmidt[6] says that tests made by him using the first method showed losses of 0.50 per cent and by the second method 0.20 per cent. Modern practice is to treat in a continuous system, the gasoline continuously runs to storage where connections are made to a gasoline recovery tank. Of course batch agitators can be hooked up with a gasoline recovery plant but this seems to have been seldom done. An agitator as usually built, is difficult to keep tight, on account of the hinged explosion doors at the top and leaky spaces when the doors are closed.

Gasoline Recovery Plants

Most refineries today are equipped with gasoline recovery plants, and at some of them all storage tanks containing crude oil or light distillates are connected to this plant so that vapors from same are condensed and returned to storage, over and over again. This method stops waste although the initial expense in gathering lines to collect the vapors may be high. The writer's company, the Burrell-Mase Engineering Co., has built one vapor recovery system, where stripped gas from the gasoline recovery plant of a refinery, is returned to the vapor space of the storage tanks, thus eliminating the entrance of air, and thereby reducing fire and explosion hazards.

Tanks must have tight roofs, of course, and be equipped with vacuum and pressure relief valves. It seems to the writer, however, that such a system offers the most positive and cheapest means of preventing refinery evaporation losses, in cases where the investment in gathering lines is not too high. All of the run-down tanks, working tanks and usually all of the pressure distillate and gasoline storage tanks can be connected up to such a system. Crude oil storage may be too far away. The cost of operation of the plant is small.

In withdrawing gas and vapors from storage tanks it is essential that regulators and pressure and release valves be of good construction, simple, sensitive, and reliable. The Burrell-Mase Engineering Co., has, in cooperation with the Chaplin-Fulton Company, of Pittsburgh, Pa., developed a regulator that operates on a pressure or vacuum of 0.3 inches of water.

[4]U. S. Bureau of Mines, Serial No. 2677.
[5]Nat. Pet. News, Sept. 21, 1927.
[6]Before West. Pet. Ref. Ass., Fort Worth, Texas, Mar. 3, 1924.

ADVERTISING PAGES REMOVED

Valuation of Natural Gasoline Plants, Gas Leases and Contracts

By Douglas Fyfe* and Graydon Oliver**

(Presented before California Natural Gasoline Association)

IN THE course of making numerous valuations of the reserves of various oil companies, it was found that these companies owned and operated gasoline absorption plants which were treating large volumes of natural gas from wells located upon their own properties, and from wells of other companies to whom a royalty was paid. As the object of these appraisals was to obtain an estimate of the value of the expected income return over a period of years, is was found necessary to adopt or devise some method of estimating the amounts of recoverable natural gas which the gasoline absorption plants would have available for processing over a period of years. In another instance, we were asked to estimate the recoverable gas available under certain contracts owned by a company desirous of constructing a new gasoline absorption plant, in order that the proper size plant might be constructed in order to most economically handle the gas over the period of availability. A plant which was capable of handling the maximum amount of gas available during the flush period might be all out of proportion for the supply of gas available after the flush period had passed. Somewhere between the ability to handle the maximum flush production and the gas to be expected several years in the future lay the economically proper sized plant.

Another instance was that of a company faced with the problem of handling gas from leases under contract which leases were to be drilled up rapidly due to a sudden change in the policy of the company owning them. At first glance, it appeared that a new plant was necessary for the proper handling of this additional gas. However, careful estimates showed that to build a new plant meant recovering just a sufficient amount of gasoline from the gas to pay for the cost of the new plant.

By increasing the size of the present plant that the company was then operating, and handling the additional gas at an overload (perhaps somewhat inefficiently for a short time) meant a considerable profit from the operation.

The valuation of the gas operations of an oil company, or of a gasoline company, is divided into two parts. The first part covers a valuation of the physical properties, and the second covers a valuation of the gas reserves, or an estimate of the amounts of recoverable gas available for treatment in the gasoline absorption plants.

Physical equipment possesses value first for its use in obtaining gasoline production efficiently, and second for the sale or disposal of the equipment at the end of its period of usefulness. In addition to these elements of value there is the more or less arbitrary conception of depreciated value.

In general, the life of a gasoline plant is entirely dependent upon the amount of the recoverable gas available to the plant for treatment. If this recoverable gas reaches the end of its life period in five years, then the life of the gasoline plant is five years. If the plant be built in units, so that a portion of these units may be removed after the gas reserves have been so depleted that the remaining units may efficiently handle the remaining amounts of gas recoverable, then the life of the portion so removed has terminated.

When the life of a gasoline plant has been terminated by the lack of gas available for treatment, the physical property may be sold, or used again upon a different property by the same owner. Salvage value of the plant may then be defined as the value that can be saved upon the abandonment, and this salvage value is reflected in the amount of depreciation that must be charged against the plant in order to determine its present worth.

The determination of the physical value of a plant is made by an actual inventory of the physical equipment owned by the company and used in the extraction of the gasoline from the gas. This equipment includes all field pipe lines, meter installation, compressor plants, absorption plants, boiler plants, gasoline and oil storage, electric fixtures and conduit, service buildings, yard fencing, etc.

Each item is inventoried and priced according to replacement value. The amount of depreciation depends upon the remaining life that the individual piece of apparatus or machinery has available at its present location, with proper consideration being given the ultimate salvage value.

Depreciation for ordinary wear and tear covers such physical wear that is incidental to the operation of the plant. Bolts may be loosened by vibration, thus permitting further jarring and damage from the same source. Moving parts are subject to impairment through friction or abrasion; they may also become overheated.

Chemical activity causes the rusting of materials exposed to the elements, the corrosion of the field pipe line by the action of the salt waters from the wells, or the chemicals used in the oil treatment, and the deterioration by electrolysis. In many places, the sulfur content of the gas rapidly destroys the equipment used to handle it. In the Coalinga field for instance, gas gathering lines that pass through moist patches of earth are oftentimes destroyed in 2 to 5 years. The effectiveness of electrolysis from stray currents is restricted to the neighborhoods of high tension transmission lines, although sometimes lesser currents have been known to effect the rate of deterioration.

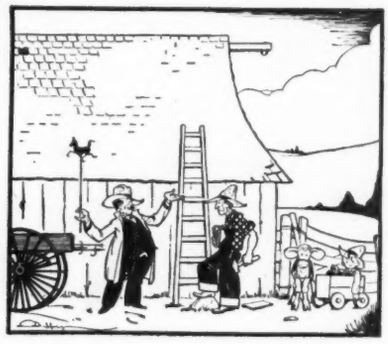
Microscopic organisms do considerable damage to wooden structures, causing them to decay and rot, and we have many instances here in the Los Angeles basin of such form of deterioration.

In the actual survey of the physical properties of a gasoline plant all of the foregoing factors must be given due consideration in the determination of the actual present value of the property. A careful analysis of the individual parts of the plant, a true estimate, according to the present material prices, of the actual replacement value of each and every component of the plant, and an actual rate of depreciation applied which will give the true present value in reference to the remaining period of life that the apparatus has to function, is the basis upon which the physical property is actually valued.

The determination of the gas reserves is a combination of engineering and geology. The estimation and appraisal of oil reserves has been common practice for many years, and various methods have been used according to the conditions and the data

*Consulting Geologist.
**Consulting Engineer.

Billions of Bubbles



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available. In dealing with the estimation of the amount of depletion of gas fields over a certain period it has been common practice to compare the shut-in pressure of the wells at the beginning of a certain period, with the shut-in pressure at the end of the period. According to Boyle's law, the pressure exerted by the gas within a reservoir of a given size will vary in proportion to the amount of gas that it contains, the temperature remaining constant. By the use of this law, a field which at the beginning of a certain period had a shut-in pressure, say of 2000 pounds per square inch and at the end of the period 1500 pounds per square inch showed a loss of 500 pounds per square inch or ¼th of its original pressure, or had been depleted approximately 25 per cent.

This method of estimation serves to ascertain the depletion of large properties but for our purposes of valuation we must know how much gas our particular property will produce from a certain number of wells during a certain stated period of time, usually a month or a year. This method therefore does not serve our purpose. It is also subject to considerable error to water encroachment as the field is depleted, which varies the size of the container and upsets all pressure calculations.

Estimates of oil reserves based upon decline curves are considered most reliable and are used whenever there is sufficient data available for their reliable construction.

In estimating the gas reserves available to a gasoline plant we have undertaken the use of the decline curve method of valuation. Oil production is the primary object of oil companies' operations, and in the making of appraisals for them it is usual to treat the gas as a secondary consideration. So long as its value is included in the result, any method of arriving at the value is considered as satisfactory. In such appraisals it is common to assume a fixed recovery of so much gas per barrel of oil produced—1000 cubic feet per barrel is a familiar figure—which is generally assigned and multiplied by the number of barrels of oil to give the amount of recoverable gas.

The try and fit methods by which the size of the bean is determined in getting a well to produce regularly at its best flowing rate, result in standard conditions which are induced by the nature of the sand giving up the production, the pressure and the gravity of the oil. Roughly, in a given area a well will produce steadily a certain pressure with a certain sized bean and a certain amount of gas will be produced. Therefore, production practises are adopted and becomes average in each field or area, and we feel safe in assuming that the average well in a given area will produce under those average conditions. Therefore, when we base estimates upon a decline curve, which is in turn based upon

sufficient data of past production in the area, we may feel confident of our result, regardless of the peculiar conditions existing within the area itself.

We have spoken several times of decline curves, and it is probably in order to explain what is meant by the term.

A production decline curve is a graphic representation of the decline in production of a well or group of wells. The data of production is plotted upon co-ordinate paper, a unit interval of time such as a day, month or year plotted upon one axis and the gas production of the well for this same interval of time plotted upon the other axis. The volume of the gas production is expressed in thousands of cubic feet per unit interval of the time plotted. Estimates of the future production are obtained by extending the decline curve into future units of time. This, of course, should be done in a careful and logical manner.

Given a decline curve based upon a fairly large group of wells within the area, with the use of reasonable care and judgment, the curve may be extended and results obtained which will show within very reasonable limits the future amounts that the wells within the area may be expected to produce.

Once the curve is constructed, knowing the production of any well within the area, we may predict its future production for we have the law that "wells of equal output on the average produce equal amounts in the future regardless of the ages of the wells." This principle was formulated by C. H. Beal and J. O. Lewis in 1918 and is the basis of most of our appraisals.

The average initial production of a field is subject to regular decline due to the decreasing gas pressure, and so the time element is very important, particularly in town lot areas. Therefore, in establishing a hypothetical drilling program it is necessary to take the utmost precaution in forecasting the initial productions of the future drilling wells. These may be approximated for the average well in a given area by plotting initial productions over a period of months in the form of a curve, which may be extended into the future. From the plotting of such curves, an insight can be gained into the probable future initials.

Likewise by plotting gasoline recoveries from the gas in gallons per thousands of cubic feet against the gas productions of the wells we obtain a curve which will assist in estimating the future gasoline recoveries from the gas. Experience has shown us that there is a tendency for the gasoline content of the gas to increase as the pressure upon the pool or field decreases. This factor is not as large as might reasonably be expected, and varies in different pools, and in dif-

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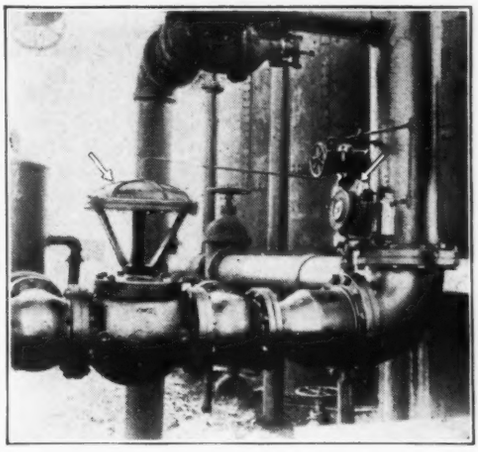

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ferent groups of wells within the same field or pool.

During the flush production of the Santa Fe Springs field in 1923, the gasoline content of the gas was as low as one half gallon per thousand cubic feet, and this content increased to eight or nine gallons per thousand cubic feet when the pressure upon the formations had been sufficiently reduced.

At the present time the gasoline recovery from the deep sand wells in the Signal Hill field averages approximately 2.3 gallons per thousand cubic feet, and with the beginning of 1932 it is anticipated that this average will have increased to 2.5 gallons per thousand cubic feet.

There are many other factors affecting the total gas recoveries from a certain tract or field, many of which have not heretofore been mentioned. During the period that the oil production from the wells is constant, and follows the average decline of the pool, the recoverable gas may be fairly well estimated. However, when the production from the individual wells reaches the approximate economic limit, the story is somewhat different, and probably recoveries after this period are dependent upon many factors that are not easily ascertained in the early life of the field or pool.

Among these factors that affect the probable recovery of gas may be listed the depth of the wells and the formation from which they are producing, the character of the sands, the thickness and texture. Salt water encroachment upon the field is early reflected in the recoveries from the edge wells. The nature of the royalty terms upon which the wells are being produced also affect ultimate recoveries, as does the price received by the producer for the oil produced.

Naturally the establishment of the future value of the gas leases and contracts owned by a gasoline plant contemplates the establishment of a schedule of future gasoline prices. This is the bugbear of the valuation engineer. At the present time, the price of gasoline appears to be more or less stabilized at the very lowest figure at which it can be manufactured and marketed. The establishment of the future price of natural gasoline, and of crude oil as far as that is concerned, with any marked degree of accuracy is hardly possible.

No mention has been made of the revenues derived from the sales of dry gas. If sales contracts with the gas companies are in effect at the time the valuation is made, the problem of ascertaining the present value of the contract is one of simple mathematics, taking the amounts of gas available for application upon the contract from the decline curve, after due allowance has been made for lease operations, plant fuel and shrinkage. Discount factors are then applied to determine the present worth of the income derived from such source.

In summing up the subject of gasoline plant valuation, in so far as the estimation of the gas reserves are concerned, we can say:

Such valuations should be of considerable value to plant owners and operators by giving an estimate of future recoveries, enabling them to build plants of proper size and to forecast future operations.

Of the various methods of estimating gas reserves, the decline curve method is considered the most reliable and most useful.

Gas decline curves may be constructed for a given field or pool, or a given area within a field, in a manner similar to the methods used for oil decline curves.

Involved in the valuation of future recoveries are also the estimation of future initial productions, which is likewise done by the curve method. The ultimate completion of a valuation also contemplates the establishment of a schedule of future prices for the product manufactured.

All of these features of gasoline plant valuation require careful and judicious handling.

New Equipment

Naylor Pipe Co., Chicago has appointed Joseph V. McMullan as foreign sales manager with headquarters in the new Chrysler Bldg., New York City. Mr. McMullan also continues as New York district sales manager for the company. He has had varied experience in iron and steel fabricating, hydraulic or pipe line dredging and in the design, construction and operation of hydraulic dredges.

* * *

Reo Motor Co., Lansing, Mich., has promoted Clarence E. Eldridge, general sales manager, to assistant to the general manager, in charge of general assignments. Elijah G. Poxon, assistant general sales manager, has been made general sales manager.

* * *

Tube-Turns, Inc., Louisville, Ky. has appointed distributors in several cities for its seamless drawn, short radius fittings for pipe welding. They include: E. F. Keating Co., 452 Water St., New York City; Himelblau-Agazim & Co., 30 N. Dearborn St., Chicago; and Stewart Machinery Co., Buder Bldg., St. Louis.

W. P. Curley and A. L. Breyvogel continue as manager of the New York and Chicago branch offices respectively.

* * *

J. A. Campbell Co., Long Beach, Cal. has published a catalog describing its entire line of gasoline plant equipment. It tells of some of the modern methods of shop and erection practice which make possible the building of a complete and permanent plant in from 25 to 35 days.

Various units employed, such as absorbers, coolers and towers, heat exchangers, distillation systems and other equipment, are described. Other information includes data on Campbell oil-froth absorbers and Mist-D-Fiers.

* * *

The Foxboro Co., Foxboro, Mass., has developed a new controller which combines the features of the Foxboro flow meter with the close control of the flow controller that the rate of flow of one fluid, as measured by the flow meter, controls the rate of flow of the second fluid. The flow meter constantly readjusts the control point of the flow controller, thus keeping the two fluids in the desired proportions.

The new device is designed particularly for use in absorption plants. The company also makes a ratio controller which controls the ratio of steam to fat oil in the steam still. Where both flows are controllable, the

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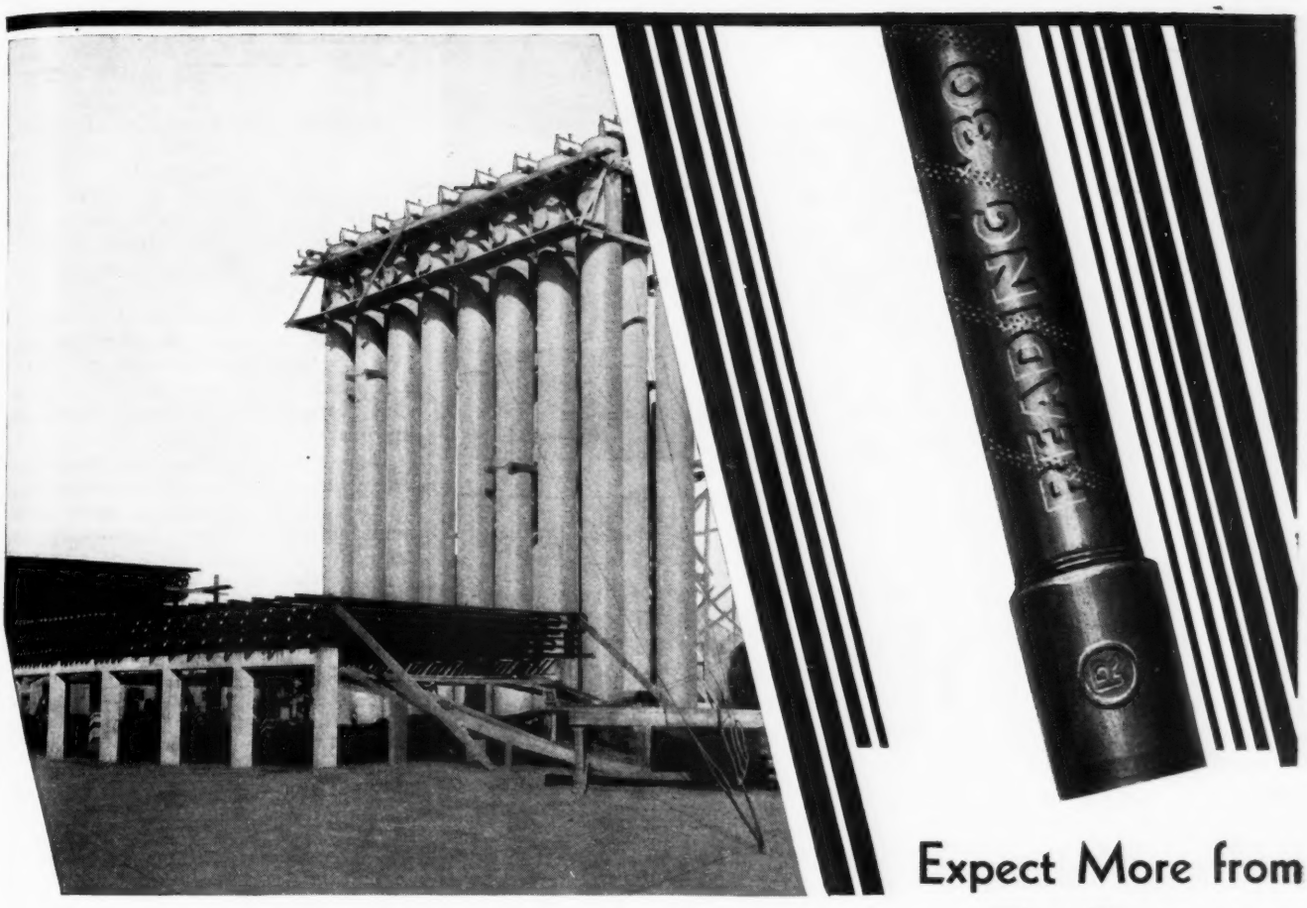

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company recommends the use of its proportionate controller, as in the blending of lube oils.

* * *

Shand & Jurs Sales Co., Berkeley, Cal., has off the press a bulletin on its hydraulic internal valves to be used in the transportation of inflammable liquids in bulk in truck tanks over public highways and through crowded districts where the hazard of accident or fire is present.

The bulletin quotes some of the recommendations made by the National Fire Protective Association on emergency and discharge control and motor shut down during loading and unloading operations.

These internal valves were developed as an outgrowth of such recommendation and oil companies and truck manufacturers have cooperated in their development. Some of the features of the valves are that they provide a shut-off valve that cannot be knocked off or unseated by any accident short of complete destruction of the tank; provides a double check against leakage; furnishes an automatic shut-off for the flow lines in case of fire; provides an automatic control on the ignition system insuring that the motor does not run while unloading gasoline.

* * *

Blackhawk Mfg. Co., Milwaukee, Wis., manufacturer of hydraulic jacks, steel socket and open end wrenches, has added two new jack models for trucks and buses.

With either one of these jacks it is unnecessary to dump a full capacity load, inconvenience passengers or waste time in laborious jacking methods. Their exceptional lowness and extreme lift adapt them particularly to low front axles—a necessity where large diameter tires are used.

* * *

Butler Mfg. Co., 1242 Eastern Ave., Kansas City, Mo., has published an attractive loose leaf book which contains buying information on almost every item of equipment needed in the transportation, storage, handling and selling of petroleum products.

Twenty-six of its 80 pages are devoted to descriptions and color illustrations of truck tanks for light, medium and heavy duty trucks, truck trailer tanks, highway tank trains and aluminum truck and trailer tanks.

Other major equipment described including airplane refueling units, storage tanks, ready-made steel buildings, power pumps, loading and unloading racks, valves and fittings for bulk storage; visible pumps, hose, barrels, drums, buckets, carrying cans and funnels for retail dispensing.

* * *

Dayton Pump & Mfg. Co., Dayton, O., manufacturer of oil marketing equipment, has placed on the market a complete line of metering pumps.

These pumps are made in different types in demand today, in both single and double meter and single and double pump models.

Features include extra large and floodlighted dials, and split dial housing which permits easy access to the meter. Pumping unit is of the cam type and is directly connected to the motor by a noiseless flexible coupling. The motor is vapor proof and full ball bearing type.

* * *

Hills-McCanna Co., 2349 Nelson St., Chicago, Ill., has placed on the market a new type of grease pump, a fully mechanical means for pumping heavy mill greases.

The grease is introduced into the feeding system of the Anderson mill type grease pump by a displacement pump operating a positive mechanical valve opened on the suction stroke and closed prior to the discharge stroke. A distributor head with the requisite number of leads is directly connected to the discharge side of the pump. The indexing of the head is secured through a ratchet attachment which allows indexing on the suction stroke of the pump and remains fixed during the discharge stroke, after which it indexes to the next lead and continues in order.

Delivery lines are attached directly to the distributor head and lead to the connections of the equipment bearings. A steam heating element is installed on the bottom of the hopper casting directly above the intake valve, to facilitate handling heavy grease during cold weather.

The stroke of the pump can be adjusted to regulate the amount of grease delivery. All running parts, other than the motor and gear reduction unit, are enclosed, and the entire mechanism operates in a grease or oil bath.

* * *

The Connersville Blower Co., Connersville, Ind., has moved its sales office in Chicago to 20 North Wacker Drive. After May 1, its New York sales office will be in the Graybar Bldg.

* * *

American Chain Co., Inc., Bridgeport, Conn., has prepared a new chain information book giving concisely facts and figures on all types of welded chain. It includes tables of sizes, weights, loads and directions for taking measurements, and rules and cautions issued by the Chain Institute.

* * *

Wilson & Bennett Mfg. Co., Chicago, manufacturer of steel barrels, drums and pails, has appointed Harry C. Smith Co., Inc., Memphis, Tenn., as sales representative in Tennessee and Arkansas. The Smith company succeeds V. P. Philippi.

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These features which are contributing to the efficiency of so many modern units can be applied to your particular requirements.

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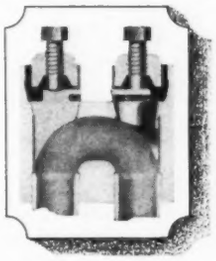

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Each type is specially designed for a specific service and for definite temperatures, pressures, etc. and the materials of construction are carefully selected for each unit to withstand the physical and chemical characteristics of the fluids to be handled. Recommendations are made only after a thorough study of the particular requirements of the installation under consideration and are based on many years of experience in successfully solving every conceivable kind of heat transfer problem.

The results of this long experience are shown in the many distinctive features of G-R Heat Transfer Apparatus, including their special provisions against leakage, high rate of heat transfer, low pressure drop, exceptional compactness and high salvage value.

Write for bulletins explaining these features in detail and describing and illustrating the many applications of G-R Heat Transfer Apparatus.

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Shell-and-Tube, Atmospheric, and Condenser Box Types

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For Canada: Riley Engineering Supply Co., Ltd., Toronto

Griscom-Russell

Heat Transfer Apparatus

New Patents

Prepared by R. E. Burnham, patent and trade-mark attorney, 1343 H Street, N. W., Washington, D. C., from whom copies may be obtained at the rate of 20c each. State number of patent and name of inventor when ordering.

April 8, 1930

PRODUCTION

Unscrewing attachment for drill-pipe—Arthur E. Martois, Compton, and Robert D. Pearson, Los Angeles, Cal. Filed Feb. 16, 1929. No. 1,753,244.

Earth-boring machine—John K. Hencken, Brooklyn, N. Y. Filed June 16, 1928. No. 1,753,339.

Method of drilling wells in gas formations—Ned O. Miller, Amarillo, Tex. Filed May 17, 1927. No. 1,753,440.

Compound slips—Robert A. Wilson and Charles S. Crickmer, Dallas, Tex., assignors to Guilberson Corporation, same place. Filed Dec. 6, 1926. No. 1,753,543.

Process of making couplings for sucker-rods and the like—Fred W. Axtell, Fort Worth, Tex. Filed Sept. 26, 1927. No. 1,753,638.

Apparatus for pumping deep wells—Charles Jacobsen, Tulsa, Okla. Filed July 5, 1928. No. 1,753,930.

Oil-well control—Walter C. Stollberg, Quincy, Ill., assignor of one-half to H. M. Sheer Co., same place. Filed April 14, 1927. No. 1,754,061.

Pump for oil wells—Charles E. Follis, Allen, Okla. Filed Dec. 10, 1928. No. 1,754,088.

MISCELLANEOUS

Fuel for internal-combustion engines—Robert John, Long Branch, N. J., assignor to Arjon Chemical Co. Filed July 27, 1926. No. 1,753,294.

Oil-tank fire protection—Willis D. Witter, Utica, N. Y., assignor to American La France & Foamite Corporation. Filed March 29, 1926. No. 1,754,005.

Tank-sealing device—Emery G. Friedman, Tampico, Mexico. Filed Jan. 4, 1929. No. 1,754,091.

April 15, 1930

REFINING

Still—Julian A. Campbell, Long Beach, Cal. Filed April 19, 1927. No. 1,754,605.

Stabilizing absorption system—Julian A. Campbell, Long Beach, Cal. Filed April 19, 1927. No. 1,754,606.

Scrubber—Julian A. Campbell, Long Beach, Cal. Filed Nov. 5, 1928. No. 1,754,607.

Sweetening process (for gasolines and kerosenes)—Gentry L. Rowsey, Amarillo, Tex. Filed April 13, 1927. No. 1,754,649.

Oil-separator—Harvey H. Gracey, Fort Worth, Tex. Filed Oct. 6, 1925. No. 1,754,789.

PRODUCTION

Well apparatus—Nelson K. Smith, Los Angeles, Cal., assignor to Byron Jackson Co., West Berkeley, Cal. Filed March 6, 1926. No. 1,754,288.

Fishing-tool—Millio F. Aloi, Huntington Park, Cal. Filed Oct. 3, 1928. No. 1,754,344.

Drill-bit—John Dahl, Dallas, Tex., assignor to Dahl Bit Corporation, same place. Filed June 15, 1928. No. 1,754,671.

Bit-lifter—Charles S. Miller, Ballinger, Tex. Filed Oct. 3, 1928. No. 1,754,692.

Fishing-tool—John M. Sauls, Seminole, Okla. Filed Dec. 4, 1928. No. 1,754,696.

Fishing-tool—John M. Sauls, Seminole, Okla. Filed Feb. 14, 1929. No. 1,754,697.

Sucker-rod socket—Fred C. Canniff, Tulsa, Okla. Filed June 20, 1928. No. 1,754,816.

Underreamer—John W. McClatchie, Compton, Cal. Filed Nov. 20, 1926. No. 1,754,830.

Roller-cutter drill—Clinton H. Bull, Columbus, Ohio. Filed Jan. 14, 1926. No. 1,754,848.

Method and apparatus for flowing or pumping wells—Richard M. Haskell, Bradford, Pa., assignor of three-fourths to Tide Water Oil Co., Bayonne, N. J. Filed Aug. 5, 1927. No. 1,754,945.

Well-flowing apparatus—Richard M. Haskell, Bradford, Pa., assignor of three-fourths to Tide Water Oil Co., Bayonne, N. J. Filed Feb. 20, 1928. No. 1,754,946.

Sucker-rod elevator—Gregory E. Sawyer, Independence, Kans. Filed March 15, 1928. No. 1,755,134.

MISCELLANEOUS

Process of enhancing the flow of oils through pipe-lines—Albert H. Ackerman, Chicago, Ill., assignor to Catalytic Chemical Co., Denver, Colo. Filed Feb. 16, 1927. No. 1,754,296.

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ON THE LAZY BENCH

National Petroleum News

Stronger Ties

It happened at Rever last week. A boy whose collie dog was killed by an automobile continued to lament his loss to a degree thought unwarranted by the neighbor's boy. The latter, seeking to stay the flow of his friend's tears, and also to chide him gently, said: "Shucks! Look at me! My grandmother died a week ago and you don't catch me crying, do you?"

"Yes," was the response, "but you didn't raise your grandmother from a tiny little pup!"

—*The Gas Line*

* * *

"Pardon me dear, but your stockings seem rather wrinkled."

"You brute, I have no stockings on."

—*Barnsdall*

* * *

It Toils Not

"That is a skyscraper," announced the guide.

Old Lady: "Oh, my! I'd love to see it work."

—*Mid-Continent Petroleum Courier*

* * *

Roughneck: "What is a petroleum engineer?"

Driller: "A geologist who has seen a drilling rig."

—*Magnolia Oil News*

* * *

A man was standing in front of Einstein as a funeral procession passed by.

"Whose funeral?" he asked of Einstein.

"Chon Schmidt's," replied Einstein.

"John Smith!" exclaimed the man. "You don't mean to say that John Smith is dead?"

"Vell," said Einstein, "vat you tink dey is doing mit him—practicing?"

—*The Gas Line*

* * *

"What has become of your ethics?" reprimanded an old doctor to a student.

"Why, didn't you know I traded it in on a Hudson?"

—*Waverly Wow*

* * *

The Main Street tourist was greatly impressed by the Coliseum at Rome.

"Boy, what a nifty stadium," he remarked. "Where's the college?"

—*The Texaco Mission*

* * *

The latest definition of rigid economy—a dead Scotchman.

—*Union Oil Bulletin*

An After Thought

The lady had lost her husband, and had given instructions to the stone mason as to the wording on the tombstone, the ending to be "Rest in Peace."

In the meantime she realized the fact that she had been somewhat shabbily treated.

She rushed around to the stone mason and told him to omit the words "Rest in Peace."

"I'm sorry," he replied, "but they have already been carved."

"Oh, well," said the lady; "add 'Until we meet again.'"

—*Mid-Continent Petroleum Courier*

* * *

Who Said City Slickers?

City Banker (visiting the farm): "I suppose that's the hired man."

Farmer (who had visited banks): "No, that's the First Vice President in charge of cows."

—*The Gas Line*

* * *

Judge: "And what are your grounds for divorce?"

Young Bride: "Harry snores."

Judge: "How long have you been married?"

Y. B.: "Two weeks."

Judge: "Granted: he shouldn't snore."

—*Barnsdall*

* * *

"Ban good yoke on me," said Ole as the egg dropped on his vest.

—*The Texaco Mission*

* * *

Inexperienced

Jim: "Aren't you wild about bathing beauties?"

Jerry: "I don't know; I never bathed one."

—*Mid-Continent Petroleum Courier*

* * *

How Come?

Long Boy: "Big Boy, wuz George Washington as honest as dey sez he wuz?"

Shorty: "Ah tell you, nigger. George wuz the honestest man dat ever wuz born."

Long Boy: "Den, how come they close the banks on his birthday?"

—*Mid-Continent Petroleum Courier*

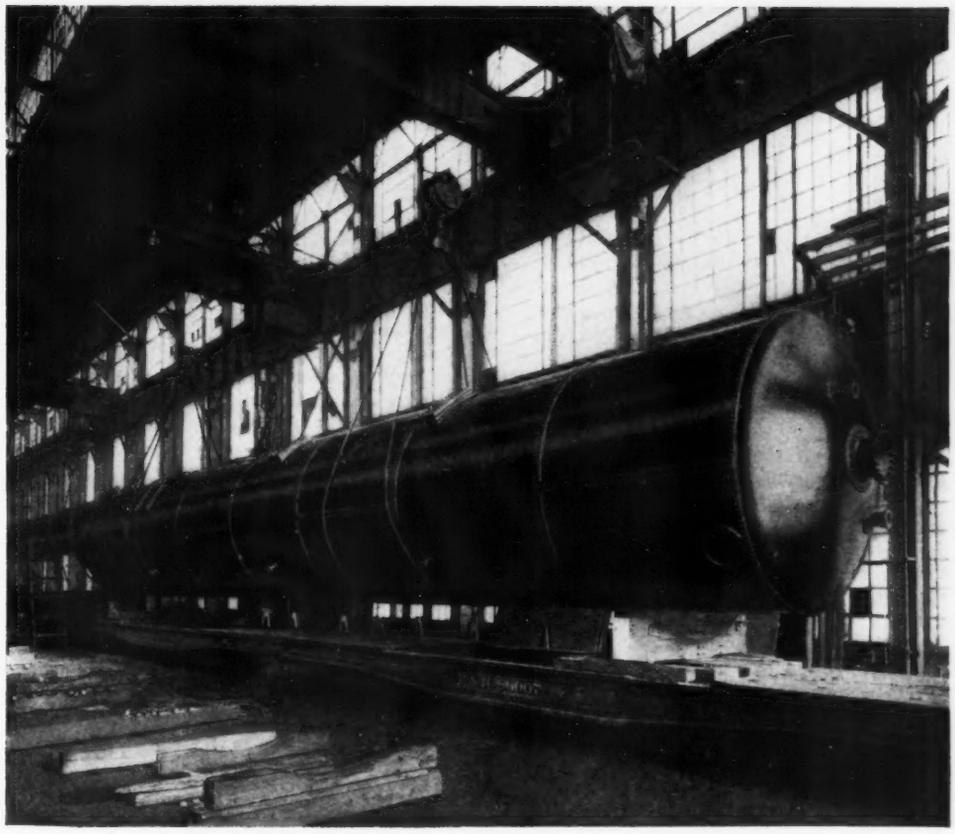
* * *

Putting On Airs

Angry Motorist: "Some of you pedestrians walk along as if you owned the streets."

Irate Pedestrian: "Yes, and some of you motorists drive as if you owned the car."

—*The Gas Line*



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Weight 250,000 lbs.
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CHESTER, PA.

Consistent Over Supply of Gasoline Is Cause of Marketing Evils

CLEVELAND, April 24

OVER supply of gasoline in relation to public requirements is the greatest single reason for the bad marketing practices which exist in the merchandising of this product, A. M. Maxwell, vice president in charge of marketing for the Standard Oil Co. of Ohio, told the National Petroleum Association here April 23.

"It follows then that a better balance between supply and demand will do more than any other one thing to restore good salesmanship in the marketing of gasoline," he said.

As a marketer he said he placed the primary responsibility for present conditions upon the manufacturing departments of the oil companies when, year after year, they have created a flow of gasoline which inevitably got beyond control. He said:

"The remedy is for every manufacturer to adjust production of gasoline closely to visible consumers' requirements.

"The quantity which can be sold in the United States in any year, or in any of the marketing areas, can be predicted with very close accuracy. Fortunately, there has been great improvement in our current information regarding crude runs and gasoline stocks. The weekly A.P.I. figures for each of the established districts are a timely and invaluable guide to operations. The study and analysis of these figures is clearly in the interest of each refining company and it is equally to the interest of each company to recognize its individual responsibility as a contributor to the supply which must be marketed.

"One of the most difficult problems arises out of the necessity of promptly appreciating the effect of changed conditions. The progress of integration in operations as between manufacture and marketing has been very great. There has been an increasingly greater quantity of gasoline marketed through company owned or controlled outlets. Many companies which performed only the marketing functions have sold their stations to companies which manufacture as well as distribute.

"This undoubtedly has increased the difficulties of the refiners who rely only or largely upon tank car sales. For these refiners there is an obvious hazard in using the past as a guide to their operations. They must recognize the changes that are taking place.

"The sound principle to follow, I believe, is to know as far as possible, where the gasoline can be disposed of, at a profit, before it is manufactured. It is well known that manufacturers in other industries do not carry as large inventories as they did some years ago. Neither do merchants and dealers. Price deflations, large and small, have taught them that inventories may be expensive assets. Manufacturing in general is now done as

A. M. Maxwell, vice president in charge of marketing, Standard Oil Co. of Ohio

orders are received and there is a steadier flow from manufacturer through the merchant and dealer to the consumer."

A complication in the situation for the gasoline manufacturer, Mr. Maxwell continued, is that he may have arranged his manufacturing program in the light of quantities which he has been able to market profitably in the past, only to find a large supply of gasoline has come into his marketing territory from unexpected, and often remote, sources of supply.

The resulting loss of expected customers has meant that the manufacturer had additional stocks of gasoline on hand which he has been forced to push on an already over supplied market.

"The pressure to sell has resulted in making concessions in price, in margin, in irregular contractual arrangements, which, in turn, have resulted in losses to both the seller and his competitors," he said.

"The psychology of salesmanship in a market that is eager to buy differs greatly from the psychology of selling in a market that is supplied to the saturation point. In the one case the salesman thinks of both price and practice in terms of a fair profit to his company and continued friendly future relations with his customers. He uses what we call good business judgment.

"In the other case he is forced to do what he can in converting an inventory into dollars. He is under pressure to sell on almost any terms and he does so in disregard of values, profits or future business considerations.

"We condemn him for bad business judgment when in fact he is not exercising any judgment at all. He does not desire to drag his competitors down with him but he does it whether he desires to or not. The competitive gravitation tends to bring prices and practices to the lowest level."

Mr. Maxwell said that, having tried to lay the blame for the chaotic conditions in the oil business today on the manufacturer, he thought it only fair to tell the manufacturer how the marketers are trying to sell the former's products.

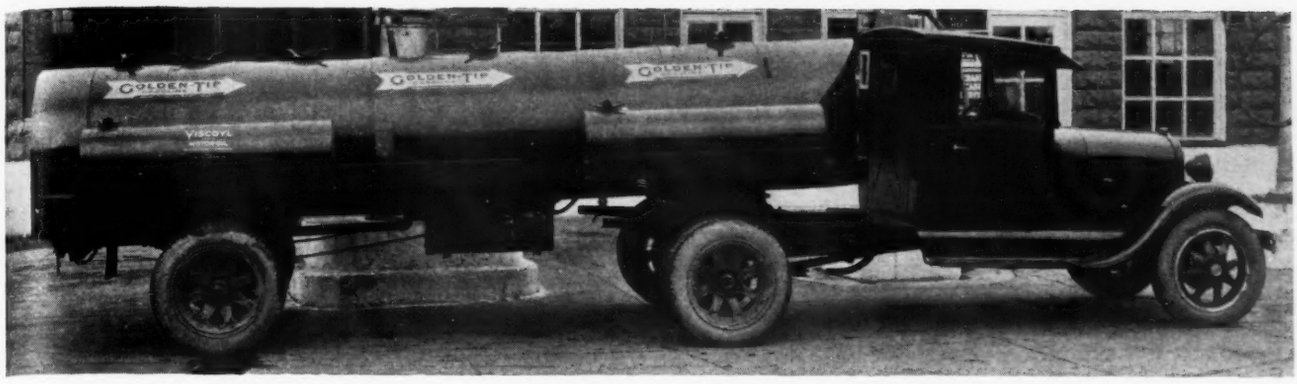
"There are really three major factors, all three in my estimation of kindred importance, which spell success from the retail marketing standpoint, namely, Quality Advertising, Quality Products and Quality Personnel to push them," he said. In discussing the third factor he said:

"I think that the personnel morale of many oil companies has been, and still is, sagging, by reason of the executives not giving enough attention to keeping to the highest pitch possible the ambitions of every man from tank wagon driver up the line.

"Here again, people are human with respect to their walk of life and they are naturally ambitious. It does no good whatever for companies to employ bright young men, have the Personnel Department give them glowing promises as to their future if they work hard and behave themselves, and then drop the matter there. The men are bound to become discouraged and this discouragement is going to show in their approach to the public with a subsequent loss to the company.

"I realize that, with any large company, this situation is very difficult when there are thousands of men to try to watch and take care of; but we have conscientiously and, I think with some degree of success, tried to have a personal touch with every man possible, and we have tried to instill into the immediate superiors down the line this particular thought and aim."

ADVERTISING PAGES REMOVED



Semi-trailer with 1100*-gallon tank equipped with aluminum side tanks for lubes. The unit has been run about* 1500 *miles by the Stoll Oil Refining Co. with few repairs*

Automotive Transportation Items

AS AN experiment the Stoll Oil Refining Co. of Louisville has been operating a 1100-gallon semi-trailer in connection with a 1½-ton Ford tractor. The unit has been operated about 15,000 miles over rather rough country with very few repairs.

It is the opinion of George Stoll, vice president of the company, that a 1000-gallon trailer would be a better size to use in the rough territory the unit has to travel over. For the type of service required it is his idea that a shorter trailer would give better service.

The present unit, as will be observed in the photograph, is arranged so that the wheel base of the trailer is the same as that of the tractor. Mr. Stoll is interested in finding out whether a material shortening of semi-trailer wheel base, as compared with that of the tractor, would add any inconvenience to the handling of the unit.

We will be glad to publish the comments of any reader who has tried out a tractor-trailer job with a short trailer wheel base.

The Stoll company has been experimenting with methods of reducing the dead weight of its hauling units by the use of aluminum for accessories to a steel tank. The company photograph illustrates the use of aluminum lubricating oil tanks mounted beside the gasoline tank. Aluminum pipe is used in connection with these.

Aluminum bucket boxes have been installed by the company on a steel tank job. By paying attention to the lightness of tanks and mountings pay loads have been increased. In one case the company hauls about 1000 gallons including goods and cans on a 2-ton White. This is done only on good level roads and with a carefully supervised driver.

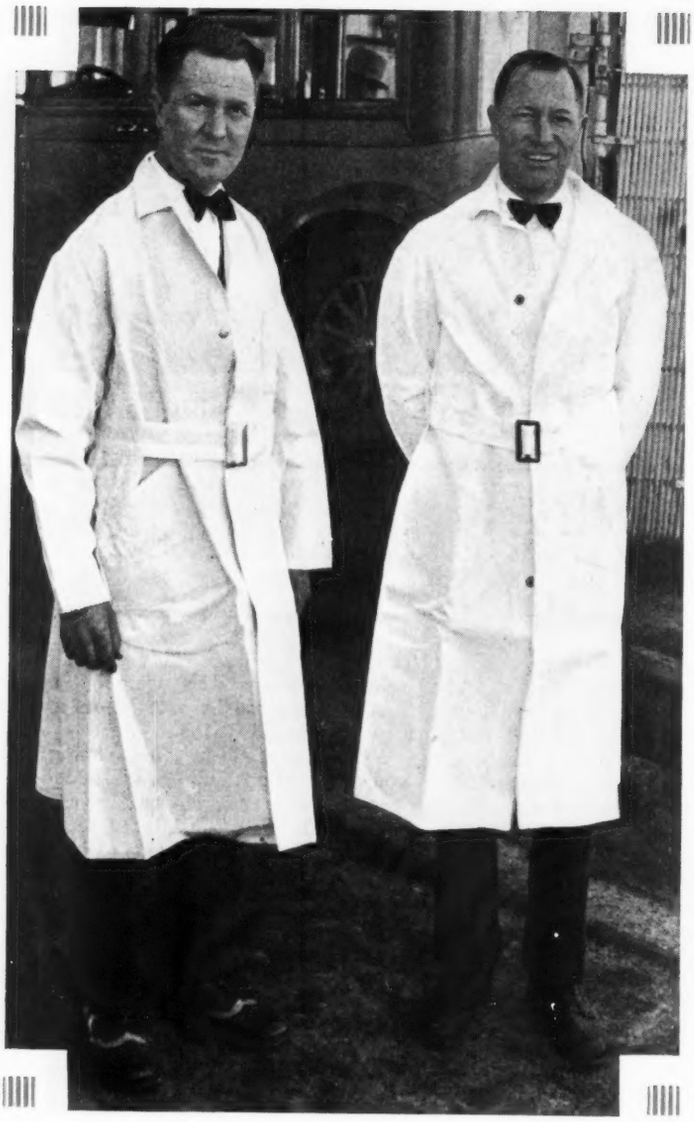
* * *

AN eight-wheel tank truck is being used by the United Fuel Co. of Seattle, in the delivery of large quantities of fuel oil without running afoul of state highway legislation affecting vehicle gross weight and wheel loads. The truck carries a 1140-gallon tank, which increases the weight beyond that which could be carried on a regulation six-wheel job.

As illustrated in the photograph below a Maxi-Unit was added to enable the truck to carry a full load. This unit consists of an idling axle suspended by means of shackles from special cantilever springs which replace the standard spring equipment of the truck. This axle carries an extra set of wheels which trail the rear duals.

The truck is powered with a regular Dodge six-cylinder engine. The length of the pay load space from the rear of the cab to the center of the front rear axle is five feet seven inches. The length of the frame back of the cab is 11 feet, two inches.

A 2-inch Viking rotary unloading pump has been installed on the truck under the rear of the tank. It is driven by a power take-off from the transmission and has a capacity of 90 gallons per minute. Oil also can be unloaded by gravity.



Charles A. and William S. Miller, in working garb in their station at San Diego, Cal.

Retreading Tires *and* Special Polish Jobs

Part of Service at San Diego Station

By R. H. Thomas

Written Exclusively for
NATIONAL PETROLEUM NEWS

NEARLY eight years ago William S. and Charles A. Miller decided to go into the service station business at 30th and University Ave., in San Diego, Calif. a city of approximately 160,000.

From the start they insisted that their place of business must be *dignified—distinctive—different;* that courtesy and the highest type of service must be meted out to all who came. They determined that they would always view their own business through the magnifying lens of discriminating motorists; that none who came once would go away disappointed but rather to advertise, spontaneously, among friends and acquaintances the new found

Miller Service, Inc., complete station at San Diego, Cal., taking in about 29,000 square feet. The straight line

service. In less than six years from the day they opened, the quarters of Miller Service, Inc., had become hopelessly inadequate to take care of their business. A more commodious location had to be found. Just a few blocks farther east on University Avenue, on the main thoroughfare leading to East San Diego, Normal Heights, and Talmadge Park, was an excellent site comprising a solid block between Herman and 32nd streets, with a frontage on University Ave. of 266 feet and 108 feet on Herman and 32nd. (28,728 square feet)

Having carefully analyzed, for six years, the kind of service and products desired by motorists, these two brothers purchased the property and then consulted architects preparatory to erecting structures of pleasing appearance upon the site, and in accordance with a layout plan born of observation, study and experience.

The buildings are of the Spanish type—tile roofs, steel walls and concrete floors—fireproof in every particular. Everything about the institution is immaculately clean.

The service to be had at this station is complete in every detail and each member of the minimum force of 32 men is an expert in his particular line. From tires to top, from motometer to stop-light, the Miller Service organization is equipped to take care of all motorists.

Dignity and dispatch in handling customers is an outstanding feature as compared with the service rendered at so many places of business today. The men seem to be as happy and cheerful in their work as the owners themselves. This, all business men know, is no happenstance. It is convincing proof of the care exercised by the Miller brothers in selecting men of high moral character and special fitness for the particular class of work in which they are engaged.

The aim of the owners is to give the kind of service that enables a motorist to know that, whatever attention and service is required by his car, will be properly attended to. The Elder System of motor car washing is employed where the basic principle of straight-line conveyors and specialized labor trained to do a certain part of the job assures the motorist the washing will be thorough.

R. H. Thomas, author of the accompanying article, is also the author of the book "Merchandising of Petroleum Products," which is for sale by NATIONAL PETROLEUM NEWS at $2.50 per copy. The special articles which Mr. Thomas writes regularly for NATIONAL PETROLEUM NEWS supplement the material published in his book.

During the washing, the car is pulled by a 300-foot endless chain conveyor in a straight line from start to finish. The water from a city main goes to a huge boiler, where it is heated to 120 degrees, thence back to high-pressure pumps, where it is mixed with cold water, and then out through high-pressure nozzles to clean the chassis and running gear of the car. Next cold water is used to wash the body. Large blowers then blow off the surplus water and the car proceeds to the other finishing operations, chamoising, cleaning the glass, vacuuming the interior and the final touching up.

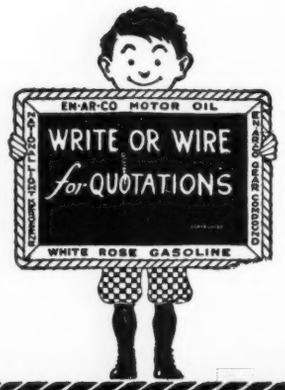
No detail has been omitted to make it possible for the workmen to give the maximum amount of work with the utmost speed and efficiency. No injurious soaps or chemicals are used. The average time required to do a good job of washing is approximately 20 minutes. Because the location is so convenient to the business district, motorists may do a little shopping while the job of washing is being done; or, if they prefer, they are at liberty to use the comfortable waiting room on the mezzanine floor of the administration building, where popular magazines are on hand. Many women peruse the fashion plates and plan a new dress and the car is ready for delivery, clean and spotless, before they realize that 20 minutes have passed.

The Jumbo Giant Electric Hydraulic Four-Wheel Brake Tester has been installed at Miller Service, Inc. station.

The days are gone when motorists thought it did not pay to retread tires, in the experience of this station. Retreading has passed the experimental stage. Tires can now be retreaded in a single cure instead of in sections and this station gets much of this work to do, as it operates the only electrically heated and controlled full-circle retreading machines in San Diego. These retreaders and section moulds are operated by electricity with an automatic heat control. The pressure and heat are applied to the tread of the tire only. The man in charge of this department is a vulcanizer of many years experience. The station guarantees the retread for the same mileage as a new tire, and it will cost about half the price of a new tire.

Four units have been erected and equipped for crank-case and greasing service. Each car receives the careful and personal attention of lubrication experts. High-pressure guns force the grease into all the vital parts that require lubrication. The

car washing department is at the extreme left in the rear of the building housing several other departments in front



En-ar-co
MOTOR OIL
White Rose
GASOLINE

YOU will make money if you handle these nationally advertised brands.

All grades of lubricating oils and greases.

The National Refining Co.
Cleveland, Ohio

Compare the Highland Coupe Cab with any other cab

Note the difference in finish—no wood exposed. All outside surfaces of metal.

Note the windshield—the way the glass is supported in rubber and the opening is sealed so as to be weather tight.

The interior finish is of the best three ply wood, which is durable and less noisy than cab with inside finish of steel.

The Highland Cab not only looks good on the show room floor, but after months of service.

The use of Highland Cabs cuts maintenance charges and adds to the advertising value of your trucks.

Specify Highland Cabs on all trucks you buy and buy them for trucks you rebuild.

The Highland Body Mfg. Co.
430 Elmwood Place Cincinnati, Ohio

HIGHLAND
For Cabs

station maintains proper equipment to efficiently lubricate any make of car. Maximum time to do the job will not exceed 20 minutes and the charge ranges from $1 to $1.50.

The mechanical repairing department is in charge of a man with more than 20 years' experience. He has been with the Millers more than four years.

"When folks know that experts, not novices, are working on their cars, it pleases them," say the Millers. "They know they are getting reliable service and that they can depend on having their cars take them where they want to go when they leave us.

"We also specialize in battery, ignition, generator, and starter service. The latest equipment for testing and repairing is installed. We recharge and repair radio batteries as well as those for automobiles. The two men in charge of this unit have had 18 and 10 years' experience, respectively. That will perhaps give you the reason for the patronage enjoyed by this department.

"You have heard the slogan, 'Save the surface and you save it all.' Well, we preach the doctrine of 'Save the paint on your car through frequent polishing.' Experienced men polish each car with the polish best suited to its finish. It makes a great difference, too, in the appearance of the job and the life on the finish. The time required for completing the job of polishing ranges from 30 minutes to three hours. A Duco or lacquer finish on a medium-size car is $3—the same finish on a big car is $5."

Practically all of the latest accessory inventions designed for the comfort of motorists are on sale in a fine display room; and that this department is a source of satisfactory profits, there can be no doubt.

Miller Service, Inc. handle Goodyear tires and tubes. Their advertising in this connection reads as follows: "You're sure of getting exceptional tire value from Goodyear Tires and Tubes, and with Miller Service you get that extra attention to your tires which gives utmost wear and satisfaction." Everything they handle is standardized and they hook their good name to all of these products of national reputation. They stand back of their merchandise and service; and from the host of motorists who patronize them one is impressed with what can be accomplished under able management and personal supervision. This firm seems to believe that a given quantity of powder behind one bullet will be much more effective than the same amount behind four or five dozen pellets—so they put all of their selling efforts behind one company's gasoline. Four "spick and span" pumps are in use most of the time discharging Associated and Associated Ethyl Gasoline. However, they handle three brands of eastern oil—Pennzoil, Quaker State and Veedol; and three brands of western oil—Avon, Cycol and Mission.

The Miller brothers, fame has spread far and wide. Motorists who come to the Pacific Coast for the winter hear of them long before they get to San Diego. While I was making my observations at their place of business, in drove a man by the name of Jim Welsh, from Estherville, Iowa. He had not been in town more than an hour and he had not yet called on his relatives; but he had heard all about Miller Bros. from tourists he had met up with along the road, on his way out. So, before surprising his folks there with a dirty looking car, he just naturally drove to the station he had heard so much about.

Miller Service, Inc., are consistent advertisers—and what they do in the way of advertising has been carefully thought out.

The old location was handled in a most satisfactory way when the company moved into the new quarters. The site was leased to none other than the United Cigar Stores, which fact impels the thought that the first corner selected and bought was not taken on without close analysis of its business possibilities. If more service station sites were selected in the same intelligent manner there would be less worry and disappointment among oil marketers throughout the country. It would seem that a great many companies are very liberal in making appropriations for advertising and extensions; but that they are mighty lame in getting the right kind of men to pick their station sites—whether leased or owned, and in training the operators who meet the public and who should be reflecting the company's policies to its customers.

The Miller brothers are strong in the very things where some of the large companies are weak. The result is that their business is constantly growing while some of the company-owned stations are dwindling in gallonage. There is no one thing more appreciated by the trade than personal contact with the owner of the business, when he operates a high-class institution and quality products are dispensed.

Since the former is impossible with the larger companies, it is much more important that they pay salaries or commissions which will enable them to get the right men and hold them so they can cash in on their investment in men, money and merchandise by training the men in the work, and inculcating in their minds the proper policies to persue and the attitude to assume on behalf of the companies they represent. Better operators—higher salaried men—with fewer highly paid supervisors would have a very wholesome effect upon the service station business and the profits from that source.

The men employed at the pumps

Increase Sales and Profits with this well-known line

This New Selling Plan Gives You

8 KEYS TO A YEAR 'ROUND BUSINESS

HERE'S the solution to that old-time problem which has always faced distributors and dealers in the oil industry who wish to make EVERY month a PROFITABLE month.

The new Amalie merchandising plan is the solution. It puts in your hands 8 master selling keys that open new profit doors, and keep them open the year around. This successful plan enables you to sell profitably ALL of the time by bringing to you a complete line of automotive lubricants that are in demand from New Year's to New Year's. Every customer becomes a prospect for many products where you sold only one before. Your time is saved, your overhead reduced, your capital not tied up.

The Amalie plan is so unusual that you should investigate it without further delay. Many have already investigated to their advantage. So, begin to make more money right now by sending for full particulars.

AMALIE DIVISION

L. SONNEBORN SONS, Inc., 114 Fifth Ave., New York

REFINERIES: Franklin, Pa., and Petrolia, Pa.

Amalie Division N.P.N.-M7
L. Sonneborn Sons, Inc.,
114 Fifth Ave., New York, N. Y.

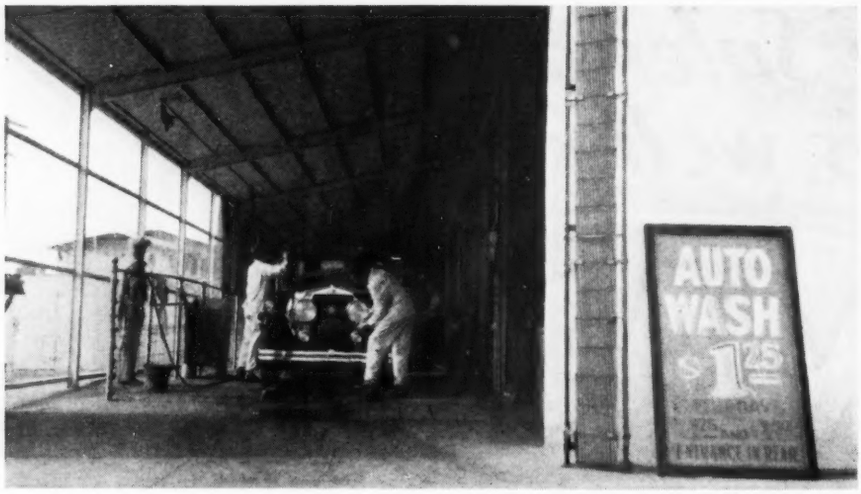
We are interested in your Amalie Merchandising plan. Please send additional information.

Company Name .....

Address .....

City and State .....

Territory Covered.....



In the car washing department a 300-foot endless chain conveyor moves in a straight line from start to finish

at the Miller station attend strictly to their knitting—their main job is to serve you—and they do it in commendable fashion. They don't tell you that the price today is 17½ cents for gasoline, but that they expect it will be down quite a bit within a few days.

On numerous occasions, I have heard attendants at service stations say to customers, when asked the price, "Well, sir, it's still 16½ cents, but I'm sure it will be much lower in a few days. You know I can't understand why we should be paying so much for gasoline out here where the oil is produced when the price hundreds of miles away is no higher." They continue to rant and talk about such things until the customer drives away. Ignorance? Yes; but who's to blame?

When an employe must apologize for his employer, it's time to get out or to know the reason for the policies persued and to get behind them. Who will acquaint the employe with the things he ought to know and then check him up to know that he does know—before he goes to work—under the present system in effect by many marketers?

One day I was driving through the country with three companions and we drove into a service station owned by one of the large companies. I asked the attendant for a brand of oil which I knew he did not have, just to hear what he would say.

His reply was, "We don't handle that oil here. All we have here is Blank Oil."

"Well, that's strange," I remarked. "You know (—) Oil is a much better product than you are handling—don't you?" And his comeback was, "Yes, I do know it has a better body, but the company won't let us handle anything but Blank Oil at this station; but you can get (—) Oil if you will drive to the garage a block south and a block and a half east."

Because we felt sorry for the operator we took his oil in spite of what he said, not because of it. And the best part of it all was that the oil he had on sale was a much better product than was asked for and which he said was on sale at the garage.

If there are those who scoff at what they are reading here, all they need to do is get someone to drive around for them and give them an honest report on the answers they get to their questions and they will be amazed at the weakness in their own organization.

Nothing like this could happen when being served at Miller Service, Inc. because all the men on the job are well paid, trained, and experienced; and they have been on the job for a long time, during which time they have each made an intelligent effort to bring in their friends and acquaintances to the institution with which they are associated.

The success of Miller Service, Inc., is just a natural result of able management, imagination in business and close adherence to sound principles of merchandising.

Steam, Scrub Fuel Oil Tanks For Gasoline Storage

CLEVELAND

HOW to clean bulk plant or truck tanks that held fuel oil over the winter so gasoline may be stored in the summer may be a problem with some jobbers at this season of the year. A South Carolina oil company asked NATIONAL PETROLEUM NEWS for this information, so the details of its reply following in case other jobbers are facing a similar problem.

Three large oil companies in Cleveland placed the danger of fumes as of primary importance in cleaning tanks that held any petroleum product. One company has the man entering the tank wear a mask.

Two men should be detailed to clean any tank. The man entering the tank should have a rope securely fastened about his waist; the other end fastened about the waist of the man on guard on top of the tank. In case the man in the tank is overcome by fumes he may be pulled out quickly by the second man.

If the man in the tank should be overcome the man on guard in no case should jump in the tank without having a third man on the outside. The man jumping to the rescue might be overcome, so it is necessary to have a man outside the tank at all times.

Before beginning to clean a tank it should be thoroughly aired out.

In cleaning a tank that stored fuel oil sweeping the inside walls and bottom with an ordinary broom may remove the residue. If the residue is too hard it may be necessary to remove it with a pick and shovel. Care should be taken so the pick will not damage the tank, but this is unlikely if the residue is that hard.

Live steam should be turned in the tank if the residue will not yield to sweeping or the pick. All manholes and openings should be closed and the steam turned in as long as necessary. In some cases a half a day will be required for steaming.

After the residue is removed the inside of the tank should be thoroughly scrubbed with kerosene or gasoline. Kerosene is preferred as there is less danger from fire. One company scrubs a tank with kerosene then with gasoline. Other companies said one scrubbing was sufficient.

To clean tanks that stored asphalt the procedure is the same. This is a more difficult task as the residue will be harder. In case the residue will not yield to a pick and shovel, it will be necessary to inject live steam. This operation will require more time than with the fuel oil tank, as the melting point of the residue will be higher. After the residue is removed the tank should be scrubbed thoroughly. Two companies recommended kerosene or gasoline, kerosene preferred; and another company recommended motor benzol.

A thorough cleaning of any tank that held heavy oil before light oil is stored is necessary to prevent discoloration of the lighter product.

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Tulsa Air Travel Twice That of Three Big Fields Abroad

By John Power
N. P. N. STAFF WRITER

TULSA

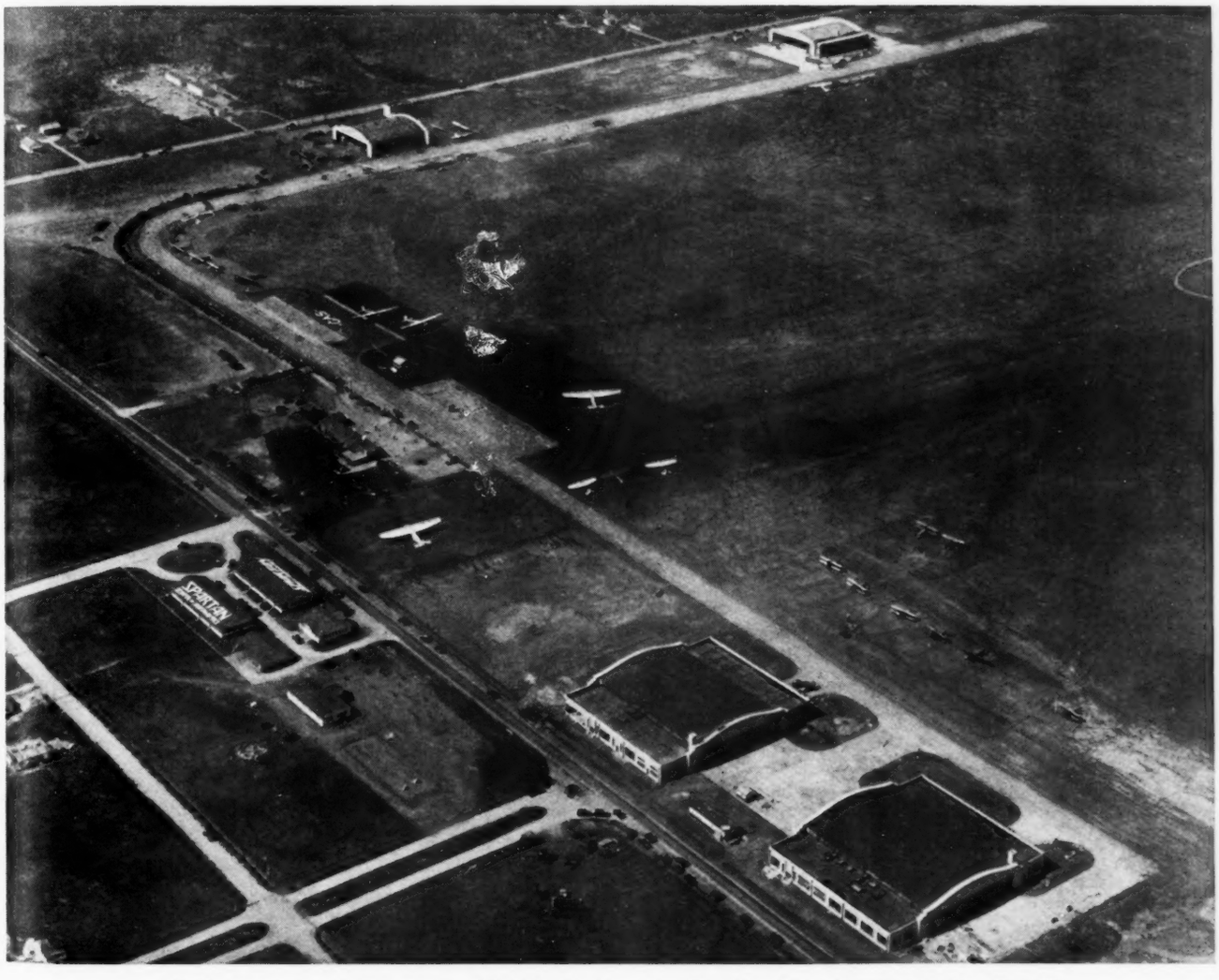
THE busiest airport in the world is at Tulsa. From the standpoint of paying passengers carried on regularly scheduled routes on and off the field, the Tulsa Municipal Airport handled in February nearly twice as many people as the three famous European ports of Croyden, England, Le Bourget, France, and Tempelhof, Germany put together figures for the month show.

During February 7373 such passengers passed though the Tulsa airport, or an average of 263 passengers daily, a record for any one month for the port, which has led this country for some time. Anxious to compare the local figures with those of the more famous fields abroad, Tulsa officials cabled to Croyden, Le Bourget, and Tempelhof, asking that they send them the total passenger traffic each had handled during February.

The figures for these three well known airports totaled 3,866 arrivals and departures, against 7373 for Tulsa, or but little over half. Of the three foreign fields Le Bourget was first with 1850, Croyden next with 1358, and Tempelhof third with 658 such passengers handled.

So airminded has Tulsa and the southwestern oil country generally become, that a trip by plane to some distant point is no longer an event out of the ordinary, but rather, an accepted mode of getting to places. Many who heretofore have known not the delights of air travel because of the high cost, have made their maiden trips recently since the introduction of the low rates. In and out of Tulsa, at least, plane fares and train fares plus Pullman leave little to choose between them. In some instances, the airway is actually cheaper than the railway, to say nothing of the time involved.

For example: Equipment executives have learned that a salesman can leave Tulsa in the morning, be in a prospects office, in Wichita, make a sale (this last is optional) and be



Airplane view of the Tulsa Municipal Airport, the "Busiest Airport in the World"

Ship taking off for St. Louis, with planes for Kansas City and Oklahoma City awaiting their turn

back in town ready to call on another prospect in less time, and actually at less expense, than was necessary by following the train schedules.

A point brought out by those who travel regularly to call on customers in Wichita, Oklahoma City, and Texas points is that by using planes to the best advantage, they are enabled to spend more of their time at home. They are not tired out after a night on one of Mr. Pullman's Class B kiddie cars, which are apparently good enough for travelers in the Mid-Continent. Representatives of all classes of business are enabled to keep in closer contact with the home offices, and their own time away from home is greatly reduced.

A little time spent at the Tulsa airport is an excellent eye opener to those who do not realize how commonplace a thing air travel can become. The constant activity of the place goes on with scarce a glance from the regulars of the port. Training ships from the nearby Spartan school land and take off with monotonous regularity in the space at the side of the regular landing field, which the school uses.

The big Curtis "Falcon," mail carrier of the N. A. T. takes off with a roaring rush. Two fellows in everyday civilian clothes and soft hats wave a cheerful goodbye to C. W. Short, Jr., airport manager, climb casually into a cabin job and take off. "Wish I was going with 'em," sighs a mechanic. "Why?" you ask. "They're going to Mexico City, and get a glass of beer," he says.

Like great moths waddling with surprising accuracy along the ground three huge tri-motored Fords take their places "on the line." A loud speaker is calling, in approved Grand Central station fashion, "Pla-a-nes for Kansas City, St. Louis, Oklahoma City, Dallas, making connections with planes for all points!"

Almost unnoticed has been the increase in the number of people in and around the station. Men, and women, yes, and a few children appear. They have long green thickets in their hands, and many are carrying suitcases, or brief cases. As soon as a passenger's destination has been learned, porters relieve him of his bags. They are checked, and placed on carts to be trundled to the waiting plane. No red caps to hunt for or tip.

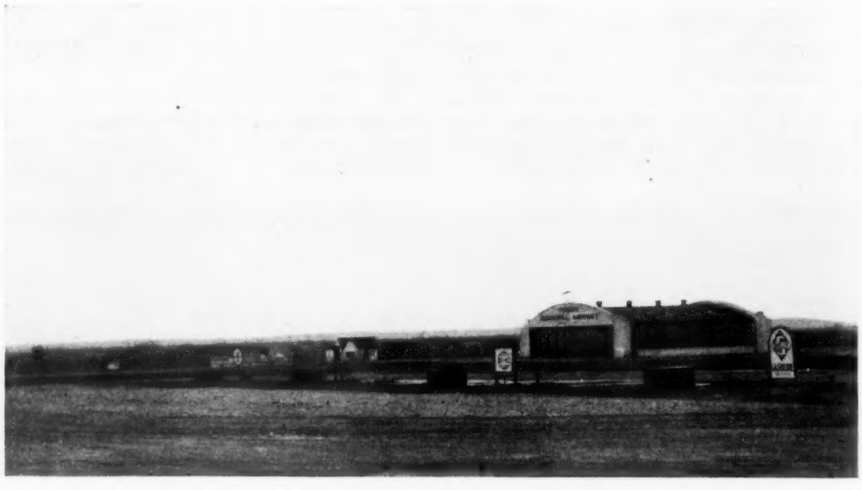
A drone overhead, and then sudden quiet. The liner from the west is in, bringing passengers for one or more of the planes bound east. As soon as the transfers have been made, first one ship and then another swings her nose into the wind, and after a short run lifts her tail coquettishly, and takes off. And that's standardized, commercial air travel out of "the busiest airport in the world."

Getting into or out of Tulsa from or to almost any place by air is a simple matter. Regularly scheduled runs to so many points are now listed that schedules and connections are extremely easy to make.

At present there are two main lines operating in and out, with schedules that provide for connections to innumerable places. Tulsa is on the main line from the south-central Texas district straight through to the East. For example, it is possible to leave Dallas, Tex., at 7:45 A.M. and arrive in New York City via Tulsa the following morning at 8:35 A.M., or in 24 hours elapsed time.

The route is by air from Dallas to Cleveland, O., and by train overnight from that point to New York City. The overall fare, including Pullman overnight from Dallas to New York, is $88.43, and the time is about half of that required by using the trains all the way.

The run from Dallas to Cleveland, through Oklahoma City, Tulsa, St. Louis, and Chicago, is one of the fastest scheduled trips in the country. It is over the lines of the Central Airways, Inc., which operates as the Southern Air Transport south of Tulsa as the Universal Air Lines north of Tulsa, and as the Colonial Airways east of Cleveland.



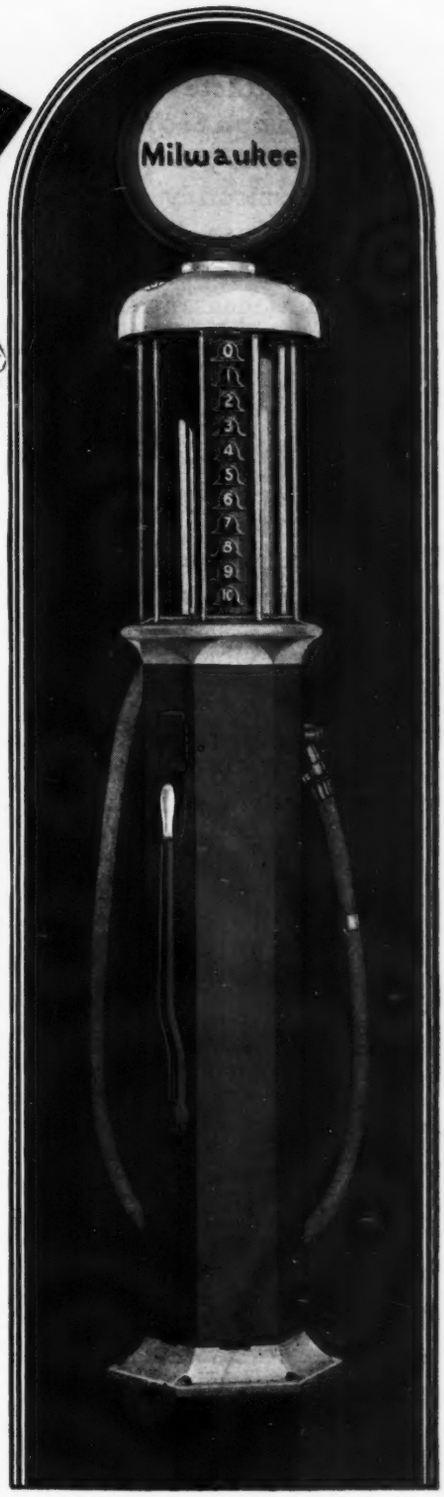
The gasoline distributing system, and the municipal hangar available to those who do not have their own facilities

The southwest Air Fast Express—colloquially Safeway—also operates planes out of and into Tulsa on much the same schedules. In addition to the Dallas-Tulsa run, via Oklahoma City, Safeway also operates lines between Dallas and other Texas points such as Wichita Falls, Abilene, Tex., Sweetwater, Big Spring, Midland. Southern Air Transport operates planes between Dallas and Brownsville, Tex., connecting with planes of the Mexican Aviation Co. for Tampico and Mexico City.

Plans have also been announced for another line the United States Airlines, Inc. to operate between Tulsa and Denver, via Kansas City. About six hours it is thought will be the time required for the trip, with the fare around $35.00.

A few of the major points which can be reached by air from Tulsa, together with the number of hours fly-

Milwaukee "10-10"



Ten strokes - ten gallons
WET HOSE ▲▲▲ EYE MEASURE
UNDERWRITERS' LABEL
First of all pumps to deliver an even gallon per stroke
SHORT THROW ONLY 68°

Day hose hook-up, in housing, guards nozzle from dirt and water. Night hook-up shown in insert, operates drain valve automatically, locks nozzle and pump handle—all at one operation.

TEN strokes — ten gallons! And more important, they're not tiresome, body-bending strokes, for the operator's arm does all the work. The short (68 degree) throw of the handle determines that.

What a pumping unit "10-10" has! Single cylinder, single piston, double acting. Seamless brass drawn cylinder, aluminum piston, all shafts stainless steel; all valves machined aluminum; self take-up packing box. Stainless steel piston guide provides large bearing surface even at lowest point of downstroke. Accessible — to remove, simply loosen three screws.

Know "Milwaukee 10-10" . . . . . the trade-*winning* and trade-*holding* visible. Know all of its specifications and the good news about its price. Send for bulletin today.

MILWAUKEE TANK WORKS, *Inc., Milwaukee, Wis.*

"Milwaukee"
Round-the-World Series

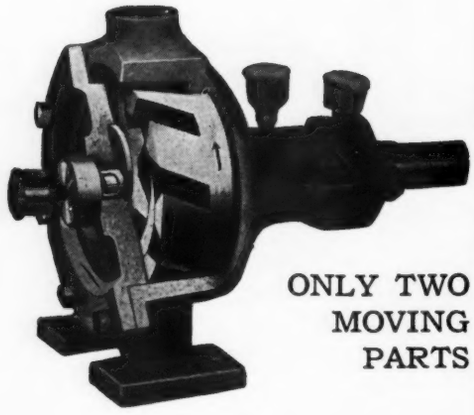
Installation at Jamaica, West Indies.

"Milwaukee" Pumps Girdle the Globe

A 5649-I-C

A UNIFORM FLOW

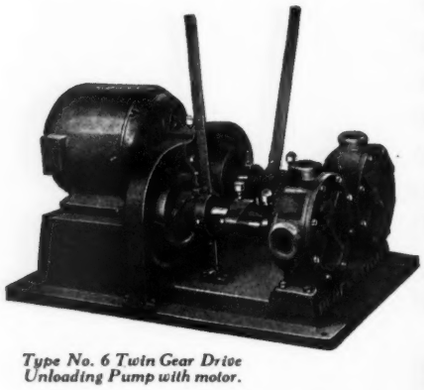
Because of the helical gear construction, there is no shock or vibration in Perfection Rotary Pumps. They run smoothly and deliver a uniform flow of oil or gas. The end-thrust of the helical gears is balanced by the pressure of the liquid passing through the pump. This means efficient operation of the Perfection Rotary Pump over many years of service. *The balanced pressure and end-thrust minimizes wear.*



ONLY TWO MOVING PARTS

There is no vibration . . . no back lash. The helical gears slice the stream of liquid passing through the pump instead of splashing into it head on. The Perfection Rotary Pump is the only one on the market with helical gears.

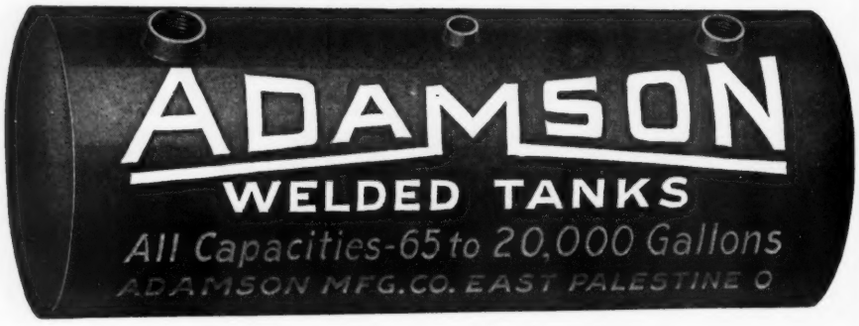
Perfection Rotary Pumps are surprisingly simple in construction. There are only two moving parts . . . the helical rotor gear and the helical pinion. The intermeshing teeth of the rotor and pinion work like a series of pistons in cylinders. Helical gears have long been recognized by the engineering profession as preferable to straight gears for power transmission. Write today for complete information regarding the Perfection Rotary Pump.



Type No. 6 Twin Gear Drive Unloading Pump with motor.

PERFECTION MANUFACTURING COMPANY
2194 East Hennepin Ave., Minneapolis, Minn.

PERFECTION ROTARY PUMP



ing time and the fares, are given herewith.

Airplane Connections From Tulsa		
Destination	Fare	Flying time
Dallas-		
Ft. Worth	$17.00	3 hours
Oklahoma City	6.50	1 hour
Wichita	7.98	1 hour, 15 min.
Kansas City	12.50	2 hours
St. Louis	19.00	3 hours
Chicago	33.70	5 hours, 50 min.
Cleveland	51.34	9 hours, 35 min.

The above schedules are those followed by the American Airways, Approximately the same schedule is in effect for the Safeway planes, save that on some of the eastern runs stops at such points as Chanute, Coffeyville, and Springfield add a little to the time between division points. The same overall rates are in effect on both lines.

To one given at all to dreaming, one of the most interesting things in connection with the use of air travel is the planning of possible trips, and estimating the time and expense involved. It must be confessed, however, that estimating the time involved is a lot more fun than estimating the expense, even with the rates as low as they are.

To give an example of what it is possible to do over a week-end when the thoughts of a dish of genuine hand-wrought Mexican tamales, or some other interior decorations reputedly available in Mexico, become overpowering.

It is possible to leave Tulsa at 5:15 P.M. on Friday night, arrive in Dallas at 8:15, take a train that night for Brownsville, and a plane of the Mexican Aviation Co. for Mexico City, arriving shortly before noon. After spending an afternoon and night in Mexico City, there is a plane available at 7:45 A.M. for Brownsville. Connections are made with a plane for Dallas out of Brownsville, arriving at the former at 7:20 P.M. A train out of Dallas would put the week-ender back in Tulsa Monday forenoon, a little shy of sleep, maybe, but back again, nevertheless.

It would be possible to run on at this rate for several columns, taking imaginary trips to all sorts of places and in all sorts of ways. But only by actually studying the time tables, and perhaps planning such trips, can one actually grasp the new day in transportation which the airplane has brought. And one little trip, if it's only for a few miles, will do the converting to air travel for those who have not yet adopted the modern method of travel to their own uses.

There are many reasons advanced for the lead in commercial aviation which Tulsa, and the Mid-Continent as a whole, has taken. In the first place, in addition to the unusual amount of "Big Business" represented in Tulsa, the city lies on what is said to be the best flying route from St. Louis to the Pacific coast.

The city lies in the belt labeled

ADVERTISING PAGES REMOVED

"Fewest Fog Days Per Month" of the national weather map. Excellent facilities for flying and flyers have been provided, and the flying routes are over the safest kind of terrain, where forced landings present few difficulties.

Another feature of importance toward the growth of business for air lines has been the fact that the cities are smaller, and farther apart, than in other sections of the country which are comparable industrially to the Southwest. Less time is required to get from the downtown sections to the airports than is the case in the larger cities of the East. With the jumps longer, the greater speed of the airplane is also much more apparent in the overall schedules from hotel in one city to hotel in another.

Ideco Buys Leidecker Tool Company

COLUMBUS, O., May 1.—The Leidecker Tool Co., Marietta, O., one of the largest and oldest oil drilling and fishing tool manufacturer in the country, has been taken over by the International Derrick & Equipment Co. here, according to Harry M. Runkle, president of the latter company.

The Leidecker company was organized in 1891 by J. J. Leidecker and associates, one of whom was W. B. Hayes, former oil man, and another, J. T. Braden deceased, first president of the Hope Natural Gas Co. and of the Oklahoma Natural Gas Co.

This company has branch stores and shops at Bartlesville, Basin and Casper, Wyo., and makes, in addition to drilling and fishing tools for oil, gas and artesian wells, a complete line of drilling machines, boilers and fittings, steam drilling engines and other similar equipment. The International Derrick company plans to continue the manufacture of all this equipment and also to use the plant as an eastern source for heavy oil well machinery.

The plant will remain at Marietta and the present organization will be retained, Mr. Runkle says. It will be operated under the name of the Leidecker company for the present.

Last year the International company bought the Boykin Machinery & Supply Co., of Beaumont, Texas, one of the largest manufacturers of rotary drilling machinery in the world. It is now building additions to that plant and constructing a galvanizing and derrick plant in Houston. It also operates a large plant at Torrance, Cal., and has a modern foundry at Delaware, O., in addition to its main office and plant at Columbus.

The company is also a large manufacturer of standardized steel buildings.

15 minutes in a cement mixer

Unretouched photograph of a stock Brookins Measure after it tumbled in a cement mixer for 15 minutes

. . . and this stock BROOKINS Measure was still fit for duty after another gruelling "SHOCK TEST"

Tumbling and threshing about in a cement mixer for 15 minutes . . . subjected to terrific impacts, hammer-blow jars, wrenching strains . . . and out again.

The result? The measure pictured here.

Does it look as though it had been through such treatment? It's *still* in good shape . . . *still* fit for service.

Brookins "Shock Tests" are devised to show the structural superiority of the Brookins Measure. They prove that this measure is scientifically designed . . . that it's built to last longer . . . that it will stand the toughest kind of service station use for many years.

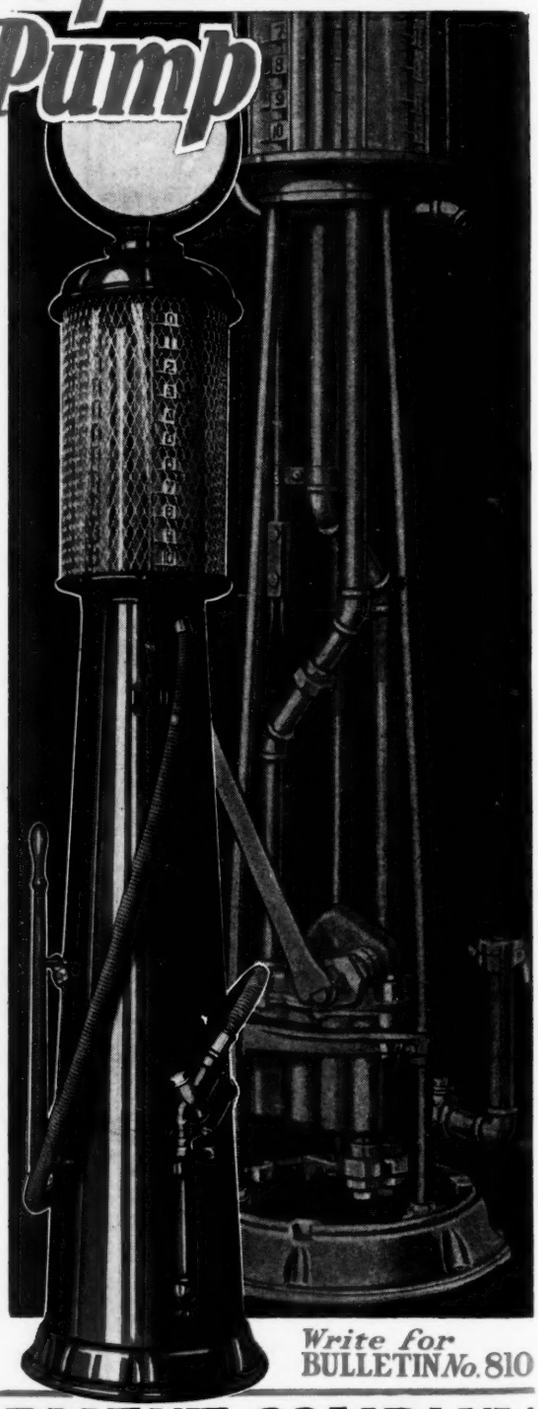
The next time you buy oil measures, remember to look for the Brookins trade-mark. That's the only way you can be *sure* of getting the measure that'll stand up under the "shock tests" of daily use year after year. See your regular jobber or write us for literature.

Brookins
SERVICE STATION EQUIPMENT

THE BROOKINS MFG. CO.
727 Hawthorne Street Dayton, Ohio

"SATISFYING AIDS TO SATISFYING SERVICE"
O-13

The HEART of America's Most Remarkable Hand Operated VISIBLE Gasoline Pump



—A Pumping Unit that assures Longer Life—Greater Efficiency and a Practical Absence of Maintenance Expense

Through the development of this marvelous pumping unit, Bennett engineers have projected visible and hand operated metering gasoline pump dispensing efficiency far in advance of existing standards. The remarkable *single-piston, double-acting* pump, perfected for this unit, employs no piston rings or plunger leathers and operates vertically. The wide diameter of the cylinder — the length of the piston stroke — and the fact that the piston travels freely without contacting the cylinder wall (virtually eliminating all friction), means easier and faster pumping — ten gallons in 11 or 12 strokes of the pumping lever. Because the pumping cylinder is inverted, all moving parts are constantly immersed in gasoline — assuring a permanently "wet" pump, and precluding the possibility of rust or corrosion.

By all means investigate the advanced and exclusive features of this unequalled pumping unit. *Write for Bulletin No. 810.*

A New Standard of SERVICEABILITY in an Old Field of Service

Write for **BULLETIN No. 810**

Note marvelous accessibilty of all parts; also ideal vertical position, with all valves located at top of cylinder block. Auto-type gasket eliminates use of litharge or key-paste.

Write for **BULLETIN No. 810**

SERVICE STATION EQUIPMENT COMPANY

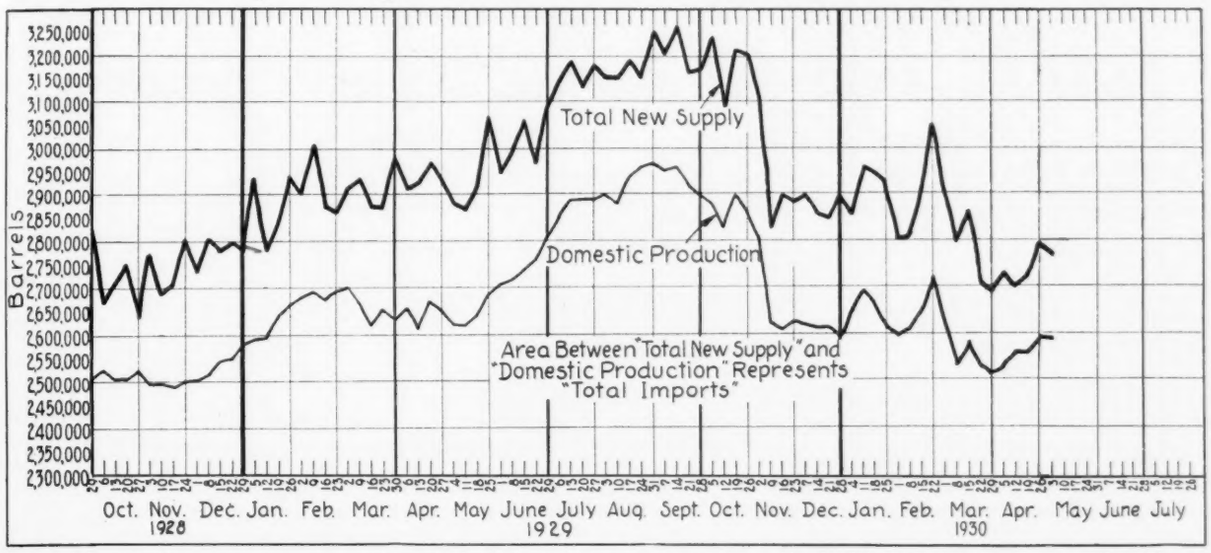
QUALITY BUILT Bennett Dispensing Equipment FOR PETROLEUM PRODUCTS

"Bennett"—"Eco"—"John Wood" Products: Everything for Filling Stations

ATLANTA—101 Marietta Street Bldg.
BALTIMORE—1002 American Bldg.
CALGARY—605 Eleventh Ave., W.
CHICAGO—910 S. Michigan Blvd.
CLEVELAND—5305 Sweeney Ave.
DALLAS—2218 S. Harwood St.
DENVER—203 Continental Oil Bldg.
LOS ANGELES—2146 E. 25th St.
NEW YORK—32 Broadway
EMERYVILLE, CAL.—Rheem Mfg. Co.
ST. LOUIS—1405 Ambassador Bldg.
TORONTO—101 Hanson St.
VANCOUVER, B. C.—824 Hornby St.
WINNIPEG—1021 Winnipeg Ave.

MAIN OFFICE, CONSHOHOCKEN, PA. (Suburb of Philadelphia)
Branch Offices and Warehouses in Principal Cities throughout United States and Canada.
BENNETT EXPORT CORPORATION, 32 Broadway, New York

Daily Average Crude Oil Production and Imports



By Telegraph—Daily average gross output, by fields in U. S., for week ending with dates below as compiled by A.P.I.

PRODUCTION SUMMARY	May 3	April 26
Production east of Rockies	1,962,100	1,959,300
Increase		2,800
Total production in U. S.	2,595,200	2,590,100
Increase		5,100
Crude oil imports	183,430	200,285
Decrease		16,855
Total crude supply	2,778,630	2,790,385
Decrease		11,755

OKLAHOMA	May 3	Apr. 26
Allen Dome	19,500	19,150
Asher	2,050	2,050
Blackwell	3,300	3,300
Bowlegs	19,000	20,250
Braman	3,500	3,500
Bristow-Slick	16,150	16,200
Burbank	16,600	16,500
Carr City	8,700	8,750
Cromwell	7,600	7,650
Cushing	14,000	14,050
Davenport	1,200	1,150
Duncan District	7,750	7,700
Earlsboro	40,000	40,000
East Earlsboro	36,100	41,450
Fox	1,250	1,250
Garber	4,750	4,750
Graham	3,500	3,500
Healdton	11,900	11,900
Hewitt	7,000	7,050
Hubbard	1,600	1,600
Konawa	9,200	9,300
Little River	37,800	38,850
Little River, East	18,550	17,400
Logan County	7,000	6,600
Maud	5,500	5,600
Mission	12,600	12,600
North Okmulgee	10,600	10,900
Oklahoma City	116,450	109,200
Osage (Outside Burbank)	26,200	26,500
Papoose	2,850	2,850
Pearson	700	650
Sasakwa	10,500	13,650
St. Louis	36,600	36,850
Scholem-Alechem	13,700	13,700
Searight	10,000	11,000
Seminole	19,600	19,900
Seminole, East	3,500	3,750
South Okmulgee	6,300	6,300
Thomas	700	700
Tonkawa	7,800	7,800
Wewoka	3,700	3,700
Yale-Jennings	8,600	8,600
Others	64,900	63,900
Total, Oklahoma	658,800	662,050
Decrease		3,250

KANSAS		
Augusta-Fox Bush	2,950	2,950
Churchill	4,400	4,450
Eldorado-Towanda	14,300	14,300
Florence-Covert	800	800
Greenwood County	19,000	18,800
Oxford	2,800	2,600
Peabody-Elbing	3,100	3,150
Rainbow Bend	1,100	1,100
Russell	3,350	3,550
Sedgwick County	21,000	21,000
Voshell	19,350	19,700
Others	33,300	33,500
Total, Kansas	125,450	125,900
Decrease		450

NORTH LOUISIANA		
Caddo, light	9,950	10,000
Caddo, heavy	2,850	2,850
Cotton Valley	2,100	2,150
De Soto and Red River	4,150	3,100
Haynesville	4,450	4,500
Holly	950	1,050
Homer	3,400	3,400
Sarepta Carterville	3,200	2,900
Urania	5,200	5,200
Zwolle	2,950	5,100
Others	1,700	1,750
Total, North Louisiana	40,900	42,000
Decrease		1,100

ARKANSAS		
Champagnolle	4,600	4,600
El Dorado	3,950	4,000
Lisbon	1,000	1,000
Nevada	850	850
Smackover, light	5,250	5,300
Smackover, heavy	40,250	40,300
Stephens	950	950
Others	1,200	900
Total, Arkansas	58,050	57,900
Increase		150

TEXAS (Outside Gulf Coast)		
Panhandle District		
Carson County	9,100	8,950
Gray County	70,900	63,000
Hutchinson County	22,150	22,300
Wheeler County	900	550
Others	500	500
Total, Panhandles, Texas	103,550	95,300
Increase		8,250
North Texas		
Archer County	18,100	18,000
Burkburnett	8,300	8,300
Electra	11,100	11,300
Iowa Park and K. M. A.	5,700	5,550
Montague-Cooke	10,600	10,650
Wilbarger	24,100	24,000
Others	2,000	2,000
Total, North Texas	79,900	79,800
Increase		100
West Central Texas		
Brown County	7,600	7,600
Callahan County	3,600	3,600
Coleman County	4,600	4,600
Eastland-Desdemona	5,500	5,500
Jack County	4,100	4,100
Palo Pinto County	700	700
Shackleford County	6,550	6,550
Stephens County	5,850	5,850
Throckmorton County	800	850
Young County	18,550	20,800
Others	1,400	1,400
Total, West Central Texas	59,250	61,550
Decrease		2,300
West Texas		
Crane and Upton Counties	42,000	44,000
Crockett County	2,000	2,000
Ector County	13,500	9,800
Howard County	39,050	40,000
Jones County	2,100	2,100
Mitchell and Scurry Counties	2,100	2,200
Reagan County	16,600	17,350
Winkler County	78,450	79,100
Yates	115,000	114,800
Balance Pecos County	4,600	4,750
Others	2,900	2,700
Total, West Texas	318,300	318,800
Decrease		500
East Central Texas		
Boggy Creek	3,700	3,600
Corsicana-Powell	6,000	6,100
Currie	300	300
Mexia	4,250	4,350
Nigger Creek	200	200
Richland	250	250
Van Zandt	21,100	20,700
Wortham	900	900
Total, East Central Texas	36,700	36,400
Increase		300
Southwest Texas		
Dale	300	350
Darst Creek	20,000	17,000
Laredo District	8,300	8,400
Luling	9,650	9,700
Lytton Springs	850	900
Salt Flat	21,250	20,850
Somerset	1,300	1,400
Others	1,850	1,950
Total, Southwest Texas	63,500	60,550
Increase		2,950
Total, Texas (Outside Gulf Coast)	661,200	652,400
Increase		8,800

GULF COAST		
Coastal Texas		
Barbers Hill	19,600	22,200
Batson	1,200	1,200
Big Creek	4,400	3,450
Blue Ridge	2,100	1,800
Boling	1,100	1,100
Damon Mound	600	600
Esperson	2,800	3,200
Fannett	1,150	1,100
Goose Creek	4,400	4,450
Hull	9,300	8,550
Humble	19,800	19,600
North Dayton	650	550
Orange County	2,350	2,400
Pierce Junction	9,050	10,500
Port Neches	1,650	1,750
Raccoon Bend	10,100	10,200
Refugio County	37,800	39,750
Saratoga	1,000	1,000
Somerville	1,700	1,750
Sour Lake	2,200	2,200
South Liberty	4,700	4,850
Spindletop	17,100	16,550
Sugarland	10,200	10,200
West Columbia	5,750	6,000
Others	8,300	8,100
Total, Coastal Texas	179,000	183,050
Decrease		4,050
Coastal Louisiana		
East Hackberry	2,300	2,500
Old Hackberry	1,300	1,300
Edgerly	500	500
Evangeline	800	900
Lake Barre	900	1,000
Lockport	2,600	2,700
Port Barre	1,900	1,750
Sulphur Dome	5,800	4,300
Vinton	3,900	3,850
Others	2,100	2,050
Total, Coastal Louisiana	22,100	20,850
Increase		1,250
Total, Gulf Coast	201,100	203,900
Decrease		2,800

ROCKY MOUNTAIN		
Wyoming		
Big Muddy	2,050	2,050
Elk Basin	700	700
Grass Creek	2,050	2,000
Labarge	2,100	2,100
Lance Creek	150	150
Lost Soldier	3,050	3,150
Oregon Basin	4,450	4,450
Rock River	2,150	2,200
Salt Creek	31,750	30,050
Others	3,850	3,700
Total, Wyoming	52,300	50,550
Increase		1,750
Montana		
Cat Creek	1,200	1,200
Pondera	2,350	1,850
Sunburst	5,600	5,600
Others	50	50
Total, Montana	9,200	8,700
Increase		500
Colorado		
Florence	600	550
Fort Collins	1,400	1,400
Moffat (Craig)	1,050	1,000
Others	1,500	1,450
Total, Colorado	4,550	4,400
Increase		150
New Mexico		
Artesia	700	700
Balance Lea and Eddy Counties	8,600	8,000
Hogback	450	450
Rattlesnake	400	450
Table Mesa	100	100
Others	900	900
Total, New Mexico	11,150	10,600
Increase		550
Total, Rocky Mountain	77,200	74,250
Increase		2,950

CALIFORNIA		
Dominguez	9,800	9,800
Elwood-Goleta	47,800	47,700
Huntington Beach	28,200	28,200
Inglewood	17,200	17,600
Kettleman Hills	15,300	15,600
Long Beach	98,900	99,000
Midway-Sunset	69,000	70,000
Santa Fe Springs	133,200	130,700
Seal Beach	24,000	24,000
Ventura Avenue	47,700	46,200
Others	142,000	142,000
Total, California	633,100	630,000
Increase		2,300
EASTERN		
(Not including Michigan)	128,000	129,000
Decrease		1,000
MICHIGAN		
Mt. Pleasant	6,800	7,100
Muskegon	4,400	4,600
Saginaw	200	200
Total, Michigan	11,400	11,900
Decrease		500

Compilation Of Mid-Continent Refinery Operations

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Mid-Continent Refinery Operations Week Ended May 2 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended May 2
Plants Reporting	12	29	25	15	12	93
Da. Av. Cap. (Bbls.)	94,500	161,700	106,100	82,000	77,000	521,300
Da. Cracking Capacity	30,700	52,600	17,200	5,000	22,700	128,200
Da. Av. Crude Runs	65,139 — 15.2	123,937 — 0.8	67,441 — 8.4	33,017 — 28.8	61,203 — 5.6	350,737 — 7.6
Da. Av. Other Oils	6,623 — 31.4	7,125 +161.9	4,269 +111.0	3,716 + 40.0	1,070 — 32.8	22,803 + 22.3
GASOLINE—Gallons						
Stocks, Apr. 25	25,987,000	69,433,000	23,462,000	9,750,000	13,928,000	142,560,000
Prod. 4-25 to 5-2	10,937,000 — 14.2	18,733,000 — 6.1	8,913,000 — 11.6	3,428,000 — 20.7	5,888,000 — 9.1	47,899,000 —10.6
Ship. 4-25 to 5-2	9,410,000 — 21.1	17,152,000 + 3.8	8,279,000 — 9.1	4,865,000 + 37.3	5,691,000 — 3.5	45,397,000 — 3.4
Stocks, May 2	27,514,000 + 5.9	71,014,000 + 2.3	24,096,000 + 2.7	8,313,000 — 14.7	14,125,000 + 1.4	145,062,000 + 1.8
Ratio Sales to Prod.	86.0%	91.6%	92.9%	141.9%	96.7%	94.8%
KEROSENE—Gallons						
Stocks, Apr. 25	8,037,000	6,902,000	2,962,000	23,000	1,766,000	19,690,000
Prod. 4-25 to 5-2	2,072,000 — 27.2	2,657,000 — 9.6	1,583,000 — 9.9	.....	524,000 + 26.6	6,836,000 — 14.1
Ship. 4-25 to 5-2	1,941,000 — 13.2	2,116,000 + 8.3	1,506,000 — 1.0	10,000	428,000 — 49.0	6,001,000 — 8.4
Stocks, May 2	8,168,000 + 1.6	7,443,000 + 7.8	3,039,000 + 2.6	13,000 — 43.5	1,862,000 + 5.4	20,525,000 + 4.2
Ratio Sales to Prod.	93.7%	79.6%	95.1%	.....	81.7%	87.8%
STOVE DISTILLATE—Gallons						
Stocks, Apr. 25	3,068,000	2,696,000	205,000	235,000	17,000	6,222,000
Prod. 4-25 to 5-2	276,000	549,000 — 6.0	196,000 + 27.3	131,000 + 5.6	37,000 — 33.9	1,189,000 — 0.4
Ship. 4-25 to 5-2	173,000	636,000 — 13.2	140,000 + 14.8	150,000 + 22.9	—495,000	604,000 — 38.7
Stocks, May 2	3,171,000 + 3.4	2,609,000 — 3.2	262,000 + 27.2	216,000 — 8.1	549,000 +222.9	6,807,000 + 9.4
Ratio Sales to Prod.	62.7%	115.8%	71.4%	114.5%	.....	50.8%
GAS OIL—Gallons						
Stocks, Apr. 25	7,966,000	43,659,000	1,848,000	4,766,000	9,184,000	67,423,000
Prod. 4-25 to 5-2	1,062,000 — 40.9	2,651,000 + 9.4	1,935,000 +135.7	476,000 + 94.3	2,323,000 — 11.6	8,447,000 + 6.7
Ship. 4-25 to 5-2	1,116,000 — 12.5	2,714,000 + 53.2	1,319,000 — 4.8	1,258,000 +126.7	2,513,000 + 12.3	8,920,000 + 23.5
Stocks, May 2	7,912,000 — 0.7	43,596,000 — 0.1	2,464,000 + 33.3	3,984,000 — 16.4	8,994,000 — 2.1	66,950,000 — 0.7
Ratio Sales to Prod.	105.1%	102.3%	68.2%	264.3%	108.2%	105.6%
FUEL OIL—Gallons						
Stocks, Apr. 25	17,324,000	34,909,000	68,295,000	15,020,000	25,421,000	160,969,000
Prod. 4-25 to 5-2	5,453,000 — 8.5	6,870,000 + 1.1	7,819,000 — 10.2	4,063,000 — 41.1	5,628,000 — 4.4	29,833,000 —12.9
Ship. 4-25 to 5-2	5,199,000 + 11.8	3,857,000 — 40.4	7,553,000 — 4.1	6,967,000 + 16.4	4,678,000 — 2.3	28,254,000 — 5.1
Stocks, May 2	17,578,000 + 1.5	37,922,000 + 8.6	68,561,000 + 0.4	12,116,000 — 19.3	26,371,000 + 3.7	162,548,000 + 0.9
Ratio Sales to Prod.	95.3%	56.1%	96.6%	171.5%	83.1%	94.7%

Gasoline Produced by Various Methods, Week Ended May 2

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	6,840,000	62.5	13,023,000	69.5	6,208,000	69.7	2,976,000	86.8	2,083,000	35.4	31,130,000	65.0
Cracked	3,454,000	31.6	4,402,000	23.5	2,074,000	23.3	276,000	8.1	2,850,000	48.4	13,056,000	27.3
Natural	643,000	5.9	1,308,000	7.0	631,000	7.0	176,000	5.1	955,000	16.2	3,713,000	7.7
Total	10,937,000		18,733,000		8,913,000		3,428,000		5,888,000		47,899,000	

+ or — columns are % change over previous week.

Crude Runs Lowered but Gasoline Stocks Rise

Staff Special—By Telegraph
TULSA, May 6

MID-CONTINENT refiners that report statistics on their weekly operations to NATIONAL PETROLEUM NEWS, reduced crude runs 36,000 barrels daily average in the week ended May 2. Each district shared in the reduction. The smallest percentage of reduction was in Oklahoma and the largest in West Texas.

The reduction in throughput put gasoline production more nearly in line with shipments. Production was 7,700,000 gallons less than in the preceding week. Gasoline shipments were only 1,500,000 gallons less. Gasoline stocks increased 2,500,000 gallons. West Texas was the only district to draw on stocks.

Crude runs in the week ended May 3, 1929, were 1000 barrels daily average more than runs last week but gasoline production was 3,000,000 gal-

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended May 2. Change in stocks figures from April 4.

GASOLINE

	Gallons
Production	205,496,000
Shipments	203,645,000
Net change in stocks	+1,851,000
Ratio sales to production	99.1%

KEROSENE

Production	28,132,000
Shipments	27,547,000
Net change in stocks	+585,000
Ratio sales to production	97.9%

STOVE DISTILLATE

Production	5,292,000
Shipments	4,880,000
Net change in stocks	+412,000
Ratio sales to production	92.2%

GAS OIL

Production	32,495,000
Shipments	29,590,000
Net change in stocks	+2,905,000
Ratio sales to production	91.1%

FUEL OIL

Production	133,967,000
Shipments	115,687,000
Net change in stocks	+18,280,000
Ratio sales to production	86.4%

lons less and shipments were 1,300,000 gallons more. Gasoline stocks a year ago were 3,800,000 gallons less.

With kerosene production and shipments lower stocks were increased 800,000 gallons.

Distillate production and shipments were lower and stocks increased 500 gallons. Gas oil stocks were reduced 400,000 gallons and fuel oil stocks increased 1,500,000 gallons.

Indiana's Bureau Makes Code Work Smoothly

INDIANAPOLIS, Ind., April 25.—The code of marketing practicing is making headway in Indiana because of the method of operation of the Indiana Code Bureau, according to Sam Hurd, executive head of the bureau.

Monthly meetings are held about the state at which informal complaints are heard by the members of the bureau, which corresponds to the various state committees on interpretation of the code. The bureau members are oil company representatives and Max L. Wickersham, secretary of the Indiana Petroleum Association.

When a company, or individual, believes it has been injured it states its case in triplicate. It retains one copy, and sends the other two to Mr. Hurd at Indianapolis. He sends one of his copies to the company or individual complained against and so far the differences have been settled between the persons or companies involved without the necessity of a formal complaint being filed with the bureau.

In one case in Fort Wayne, for example, one of the major companies took a curb account from another large company, which had a lease on the installation, curb leases being permitted in Indiana. The lessee made an informal complaint and the other company sent a truck to the dealer and pumped out all its gasoline and put in place the pump it had removed.

The Indian Refining Co. at Indianapolis has gone beyond the code provisions in posting its prices by giving the names, addresses and terms of all accounts which get deviations from the general posted prices.

Hadlick to Speak in Virginias

NEW YORK, May 3.—Paul E. Hadlick, secretary of the division of marketing of the American Petroleum Institute, who has attended many state jobber conventions this year to speak on the code will attend conventions soon in the Virginias. He will attend the Virginia Oil Men's Association meeting in Roanoke, Va., May 14, and the West Virginia Oil Marketers Association convention in Charleston, W. Va., June 13.

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When your stations are Dayton-equipped your air worries are over. Nothing to get out of order in these Two-Stage Air Compressors. They eliminate 'Out of Order' signs, thus winning the favor of the car owners, local or touring. Made in several capacities so that there is one to fit every size and every need of your station.

These Two-Stage Dayton Units are built to last a lifetime and give service, uninterrupted and perfect service, all the while.

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The only two-stage Air Compressors in the world of which this can be said and proved.

Afford daily proof that simplicity means efficiency and low operating cost.
First cost low—
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This is the Dayton Two-Stage G-8. Send for Bulletin and get details.

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150 lbs. capacity—25 foot hose
8 cub. feet of air every minute.

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To those who want quick-starting, zooming getaway, flashy action in traffic and brilliant performance on the road...here's Sinclair Aircraft Gasoline. It is the *Ace* of high test gasolines because it is specially manufactured at Sinclair Refineries, meeting the requirements of the Federal Specifications Board for Aviation Gasoline—domestic grade—and gives sustained power. Due to its careful fractionation it is free from dissolved gases which cause gas locks, uneven distribution, galloping and engine balk.

For those who want high compression and better low gear performance, with a complete absence of knocks, even on a long hill...here's Sinclair H-C Gasoline. It's *all* gasoline—nothing added.

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Refinery - Tank Wagon Markets

National Petroleum News

Technical Positions of Markets Improve As Bullish Factors Predominate

CLEVELAND, May 6

ADVANCES of from 1 to 3 cents per gallon in Standard Oil Co. of New York tank wagon prices, a 25-cent cut in Pennsylvania crude and the purchase of nearly 10,000,000 gallons of export gasoline in the Mid-Continent were high lights of last week's oil markets.

In addition to the foregoing, markets in practically every district in the country attained better technical positions in swinging into the new month, being relieved for the most part of materials in the hands of brokers which had had a tendency to create some soft spots toward the end of April.

Although trading was on a much smaller scale in virtually every section, events of the week which might be construed as bullish were in the majority. The Pennsylvania crude reduction had somewhat of a depressing effect on the trade in this area temporarily. Generally speaking, refined oil prices there reacted but slightly to the cut in crude and it was the consensus of opinion among traders that any further reaction would be negligible since stocks of practically all oils were in good shape and the big consuming season is yet to come.

The improvement in retail prices in Standard Oil Co. of New York territory was viewed with great satisfaction by the eastern trade. This was particularly true of the upper part of New York state where abnormally low prices have been known to last throughout many a summer. Retail prices in this territory were 3 to 4 cents higher April 30 than they were April 1.

Tank car prices for gasoline were at a standstill in the Mid-Continent and Chicago markets. They advanced 0.25-cent in some sections along the Atlantic seaboard, reacted downward slightly in the Pennsylvania market following the crude cut, and improved considerably on the west coast where retail markets were said to be in much better shape.

Although the May gasoline purchases of exporters in the Mid-Continent were smaller by about 3,000,000 gallons than they were in April, the trade in this area was glad for the assurance that even this amount—10,000,000 gallons—would not find its way to the domestic market.

Kerosene buying was disappointing and prices slipped 0.125 to 0.25-cent in virtually all refining districts. Fuel oil buying was light in volume. Slight recessions in prices were noted in some areas but generally speaking they held up fairly well.

Lubricating oil prices generally were unchanged. Demand was fair to good. Wax was the slowest of all petroleum products; prices were off 0.125 to 0.25-cent a pound in the most important markets.

Gasoline Marks Time in Chicago Market

CHICAGO, May 3

THE Chicago market marked time in the week ended May 3, apparently awaiting a more active spot demand and the disposal of the last of the holdover gasoline which had been dominating the market since the last tank wagon advance on April 12.

The opinion among the Chicago trade was that good motoring weather over the coming week would put the spot gasoline market back on a comparatively active basis. They said that practically all the U. S. Motor which had been bought by marketers for shipment over April had been disposed of, with the exception of some cars which had been put in transit on April 30.

The gasoline market appeared in better shape on May 3 than for some time past, several sellers reported. They said that spot buying had been a little better, due possibly to the fair weather during the past few days, and that they were not running into much competition now from distress and off specification gasolines.

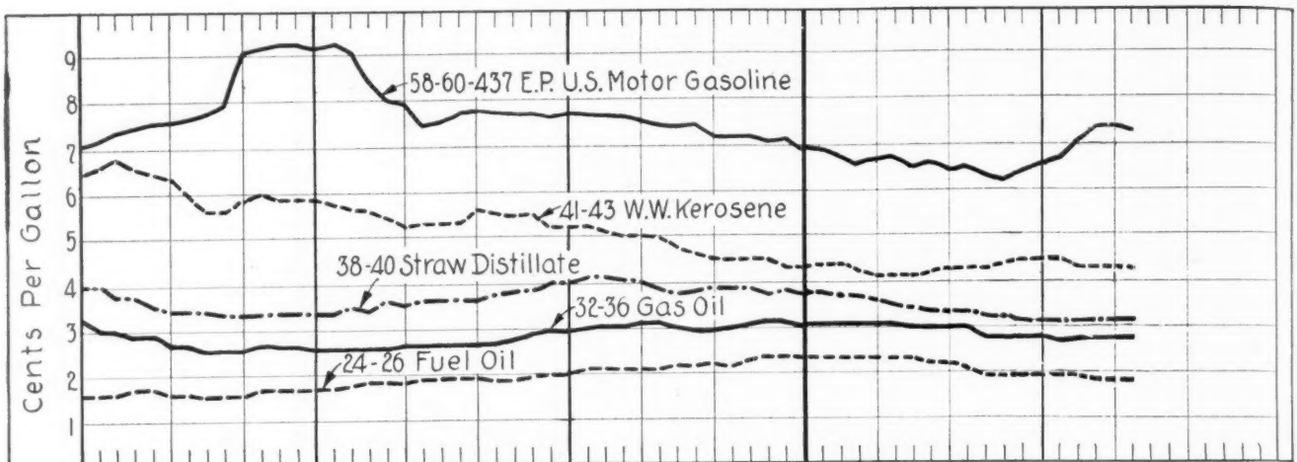
However, most sellers were of the opinion that it would take at least a week of warm weather to put much life into the market. They reported that jobbers stocks of gasoline still were large and that they were holding off buying just as long as possible in the hopes of a lower market.

Considerable interest was shown by the Chicago trade in the 25-cent reduction in Pennsylvania crude made May 1. In most quarters this was considered purely a local condition that would have no effect on middle western gasoline markets. However, several sellers said that it had had a dampening effect on bullish sentiment concerning an advance in Mid-Continent crude prices. It was also believed that this production might mean lower prices on Pennsylvania gasolines coming into the Ohio territory and unsettle the market there.

U. S. Motor gasoline for shipment over May, continued to be an item of considerable interest to the Chicago marketers. In general, marketers reported, it was hard to buy full specification U. S. Motor for May delivery at under 7.50 cents and they were not willing to pay this figure. Two marketers reported buying some U. S. Motor for May shipment out of Oklahoma at 7 cents.

It was reported here that Tulsa marketers were offering to sell Oklahoma and north Texas Motor for May shipment at 7 cents, plus their buying charge of $5.00 per car. Several marketers reported buying Motor in north and west Texas and in Louisiana at 7.25 cents, f.o.b. Group 3. One marketer said he had offered to sell U. S. Motor for May delivery to jobbers at his present spot price (7.125 cents) plus one-half of any tank

Current Prices of Principal Mid-Continent Refined Products


58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Cents Per Gallon
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr May June
1929
1930

Prices shown are in Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

wagon advance which may be made by the Standard of Indiana during May. He reported little success with this proposition. Another marketer reported moving a little U. S. Motor for May shipment at a flat price of 7.625 cents.

While gasoline buying was generally quiet, there was some business being transacted and this was mostly reported at 7.125 to 7.375 cents for full specification U. S. Motor for 10-day shipment. Marketers reported they could buy for spot shipment, both in Oklahoma and Texas, at 7 cents. A number of refiners reported sales at 7.25 to 7.375 cents. The majority of the larger Mid-Continent refiners continued to offer U. S. Motor at 7.50 cents, but reported few spot sales at this figure.

Opinion was divided regarding kerosene demand and prices. One refiner reported his sales had been keeping pace with production and that he still was getting 4.50 cents for the 41-43 w.w. grade. Most of his demand was coming from the northwestern portions of the Standard of Indiana territory. Several sellers reported a fair demand for the 41-43 w.w. at 4.25 to 4.375 cents. Other sellers said their business was decidedly light and that prices were moving lower. They were not expecting demand to be as good in May as it was in April.

Little change was apparent in the distillate and gas oil markets over the week. Demand was holding up fairly well in most quarters and prices generally were at the same level as the previous week. A number of tank wagon distributors of furnace oils said that April had been a very good month, both from the point of gallonage and profit, in contrast with March, which was disappointing due to the warm weather prevailing most of the month.

Fuel oils were quiet in most quarters of the Chicago market. Sellers of industrial fuels said there was very little spot buying being done and most of the business was on contracts. They reported that industrial plants still were not running at a very high rate, and consequently this has held back the demand for fuel oil.

Rather frequent periods of precipitation are likely next week in the Standard of Indiana territory, says the Chicago weather bureau. No marked extremes of temperature are likely.

Late Market Changes

NEW YORK—On May 6 the Standard Oil Co. of New York announced that retroactive to April 29 its tank car price of gasoline, delivered, was 6.50 cents under the net service station price, instead of 5.50 cents as formerly. This basis of determining tank car prices applies to all of Standard's terminals equipped to make tank car shipments and amounts to a reduction of 1 cent a gallon.

Shipments From Southern California

LOS ANGELES, May 1.—Shipments of bulk petroleum from Southern California ports for week ended April 26, were as follows:

Destination	Crude	Gasoline	Diesel	Kerosene	Fuel	Gas-Oil	Total
Pacific For.	11,666	72,467	65,146	124,348	293,854	.....	567,481
Atlantic Dom.	.....	403,995	.....	.....	.....	64,725	468,720
Atlantic For.	.....	.....	.....	.....	.....	.....	.....

Prices 10 Years Ago
May 3, 1920

	Oklahoma	Penna.
58-60 U. S. Motor.....	23.00c	25.00c
80-84 Natural	18.00–19.00c	.....
Kerosene (41-43 Okla.; 47 w. w. Pa.)	11.25–11.50c	15.25–15.50c
Fuel Oil (24-26 Okla; 38-40 Pa.)	$3.25–$3.50	13.50c
Crude (Okla. 35-35.9)....	$3.50	$6.10
Chicago tank wagon		25.00c

Prices A Year Ago
May 6, 1929

	Oklahoma	Penna.
58-60 U. S. Motor.....	7.6696c	9.25–9.75c
Grade A Natural	7.75c	.....
Kerosene (Okla. 41-43; Pa., 47 w. w.).....	5.75–6.125c	8.50–8.75c
Fuel Oil (Okla. 24-26; Pa. 36-40)	$0.65–$0.70	5.50–5.75c
Crude (Okla. 35-35.9)..	$1.17	$4.00
Chicago tank wagon		14.00c

Mid-Continent Refinery Markets

Gasoline Withstands Week of Bad Weather

Staff Special
TULSA, May 3

THE Mid-Continent gasoline market pulled through the last week of April and entered May in a somewhat unsettled condition due primarily to the adverse weather conditions which prevailed in much of its marketing territory. Prices were not, generally speaking, any lower although a softer undertone was noted early in the week, but removed May 1 and a little more optimism developed when export gasoline purchases for May were announced.

The buyers for the members of the Export Petroleum Association bought close to 10 million gallons of gasoline for shipment during May. The orders were placed in Louisiana, Texas and Oklahoma. As in the past refiners who desired to do so could share in the business but this month the buyers did not have as much gasoline offered them as in former months.

This was undoubtedly due to the prices paid. It will be recalled that the prices paid the refiners are based on the posted prices for gasoline at the Gulf. While the domestic market has advanced since the crude advance April 10, the export prices have not been changed and refiners the latter part of April obtained almost as much for their U. S. Motor from the domestic trade as they did for their 64-66, 375 e. p. gasoline for export. The export price for the 64-66, 375 e. p. grade was 7.25 cents, f.o.b. north Texas.

With that situation prevailing refiners in some instances naturally were reluctant to go out of their way for export business although such business admittedly is desirable from several angles. There is the possibility, of course, that the export prices will be advanced in the near future, in which event the refiners who accepted business for May will benefit accordingly. Should the prices be advanced as much as 0.50 cent a gallon, it will mean that the refiners will get just that much more—or 7.75 cents a gallon—for their gasoline.

Reports to general offices from many sections of the marketing territory, meanwhile indicated jobbers had their gasoline tanks full and were doing only a fair amount of business because of rains. Marketers who had bought gasolines for over the month shipment, meanwhile, combed the market the last two days of April, offering bargain prices if the buyer would furnish immediate instructions.

After the first of May, however, the situation apparently cleared somewhat and refiners became more optimistic after the export purchases. The Oklahoma and Kansas refiners saw in the purchases the removal of a possibility of their having to compete with north Texas in Standard of Indiana territory for domestic business.

Some buying for over May was reported, prices for 58-60 U. S. Motor ranging from 7.125 to 7.50 cents, depending on point of origin, but for the most part refiners were more inclined to play the spot market in the face of the persistent talk that another crude advance is not far away. It is generally believed, however, that a week or 10 days of good motoring weather will be required to give the gasoline market sufficient support, and if that good weather comes along the first half of May the gasoline market could support a crude advance.

The natural gasoline market was comparatively steady throughout the week with prices for all grades virtually the same. There was a pronounced scarcity of grades BB and C for spot shipment, with many plants having gone to grade AA because of the weather. That naturally caused an increase in grade AA, and brought the prices well in line. One or two buyers in the course of the week were forced to purchase grade AA to ship on the grade BB orders which they already had booked.

Quotations for over May were considerably higher in some quarters than the spot market. One company was understood to have quoted above 7 cents for May shipment, the sales manager anticipating an improved demand from refiners and a crude advance. This seller the morning of April 10 accepted some business at under 6 cents, only to see the market advance later in the month after the crude advance was announced. He says he does not want to take that risk again.

The heavy rains in much of the farming belt have kept the farmers out of their fields, with the result kerosene demand was lighter in many quarters. Again the weather becomes a factor, for with a week of sunshine the farmers will be busy getting their crops in shape, and the trade generally anticipated a slight improvement in demand for kerosene even though this demand does not develop sufficiently to affect prices.

Gas oils and stove distillates were virtually out of the picture although prices generally were unchanged.

Fuel oils were decidedly easy in virtually every district. Oklahoma refiners reported they were getting very little business either for spot or over the month, and they were encountering stiff competition from all quarters.

Kansas refiners indicated a similar situation existed with them. North Texas refiners late in the week obtained their usual first of the month orders from railroads and industrials, but the business was not sufficiently heavy to boost prices.

It was the opinion of several sales managers that fuels would remain easy until such time as refiners could afford to crack more oil either because of higher crude prices or because of an active gasoline market. That may not come before July or August if it comes at all.

Neutral oils were unchanged as far as prices were concerned and demand was holding up well, a majority of manufacturers reported. Bright stocks were sluggish in most quarters, and Oklahoma manufacturers viewed with some apprehension the reduction in price of Pennsylvania crude oil. They were afraid the reduction would result in lower prices for Pennsylvania bright stocks which in turn would force a reduction in the Mid-Continent.

Wax was listless at unchanged prices.

Testing of Tank Car Equipment Resumed

NEW YORK, May 3.—Resumption of the work started in 1925 on testing tank car bottom outlets, safety valves and dome covers will begin shortly at the School of Mechanical Engineering, Purdue University, Lafayette, Ind., according to the American Petroleum Institute.

The tests were inaugurated by a joint committee of the American Petroleum Institute, American Railway Car Institute and American Railway Association, with A. E. Smith, vice president, Union Tank Car Co., Chicago, as chairman.

A specially designed apparatus on which tests are conducted consists of a 2000-gallon tank mounted on a frame swung from supports by wire rope above a section of railroad track. In testing, the valve is installed, the tank is filled with water and impacted against a buffer of loaded tank car. It is swung various distances to simulate the different speeds that might attend actual railroad operation. Valves are tested for vapor and liquid leaks, rate of discharge, resistance to damage and for longevity.

Comparative Prices of 58-60 U. S. Motor Gasoline, 437 E. P., Group 3 and Point of Origin, to Jobbers Only

In Effect May 5

	Price F.O.B. Group 3		*Price F.O.B. Point of Origin*		*If for Particular Destination*
Oklahoma	7.3611	(Wt. Avg.)	7.3611	(Wt. Avg.)	.....
Kansas	7.50	.....	.....	.....	S. O. Neb. & Indiana Territory, etc.
Kansas	.....	.....	No sales reported		Kansas only.
North Texas	7.25–7.50	.....	7.125–7.375	.....	.....
West Texas	7.50	.....	7.50	.....	.....
Louisiana-Arkansas	7.25–7.50	.....	.....	.....	Michigan, Ohio and Indiana.
Louisiana-Arkansas	.....	.....	7.75	.....	State or differential haul.
Indiana-Illinois	7.25–7.50	.....	.....*	.....	S. O. Indiana territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

Chicago Resale Market

CHICAGO, May 3.

SPOT gasoline buying was light in the Chicago market last week due, sellers reported, to the fact that jobbers still were not much interested in the spot market on account of well filled storage. Some sales of U. S. Motor already in transit were reported at under 7 cents, but apparently there was very little of this material left in the market. Sales of full specification Motor, for shipment within 10 days, generally were at 7.125 to 7.375 cents.

Following prices represent majority of sales made on Group 3 freight basis, although shipments may originate in other refining districts such as north and West Texas, Arkansas, Louisiana, Indiana, Illinois, Kentucky, etc.

	Prices May 5	**Prices Apr. 28**	**Prices Apr. 21**
58-60 U. S. Motor, 437 e.p.	7.125– 7.375	7.125– 7.375	7.125– 7.25
60-62 437 e.p. gasoline	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
60-62 400 e.p. gasoline	7.50 – 7.75	7.50 – 7.75	7.50 – 7.75
64-66 375 e.p. gasoline	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
68-70 350-360 e.p. gasoline	8.00 – 8.25	8.00 – 8.25	8.00 – 8.25
*Domestic Aviation Gasoline	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
41-43 w.w. kerosene	4.25 – 4.50	4.25 – 4.50	4.375– 4.50
42-44 w.w. kerosene	4.625– 4.75	4.625– 4.75	4.625– 4.75
38-40 straw distillate	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
32-36 ordinary dark gas oil	2.375– 2.625	2.375– 2.625	2.375– 2.625
32-36 dark zero gas oil	2.50 – 2.75	2.50 – 2.75	2.50 – 2.75
32-36 straw zero gas oil	2.625– 2.75	2.625– 2.75	2.625– 2.75
28-30 zero fuel oil (per bbl.)	$0.90 –$0.95	$0.925–$0.95	$0.925–$0.95
28-30 fuel oil (per bbl.)	$0.90 –$0.95	$0.90 –$0.95	$0.90 –$0.95
24-26 fuel oil (per bbl.)	$0.75 –$0.80	$0.75 –$0.80	$0.75 –$0.80
18-22 fuel oil, low sulfur (per bbl.)	$0.60 –$0.65	$0.625–$0.675	$0.625–$0.675
18-22 fuel oil, high sulfur zero (per bbl.)	$0.60 –$0.65	$0.60 –$0.65	$0.625–$0.65

*Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% recovery at 221°.; 90% at 311°; 96% at 347°; end point 374° F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

†Represents both sales and quotations.

Weighted Average Prices

OKLAHOMA

	May 5		**Apr. 28**		**Apr. 21**	
	No. of cars	**Price**	**No. of cars**	**Price**	**No. of cars**	**Price**
58-60 U. S. Motor, 437 e.p.	9	7.3611	6	7.2500	7	7.4107
60-62 437 e.p. gasoline	No sales reported		4	7.4062	2	7.5625
60-62 400 e.p. gasoline	1	7.7500	No sales reported		No sales reported	
64-66 375 e.p. gasoline	No sales reported		No sales reported		No sales reported	
*58-60 437 e.p. gasoline	..	7.00–7.50	..	7.125–7.50	..	7.25–7.50

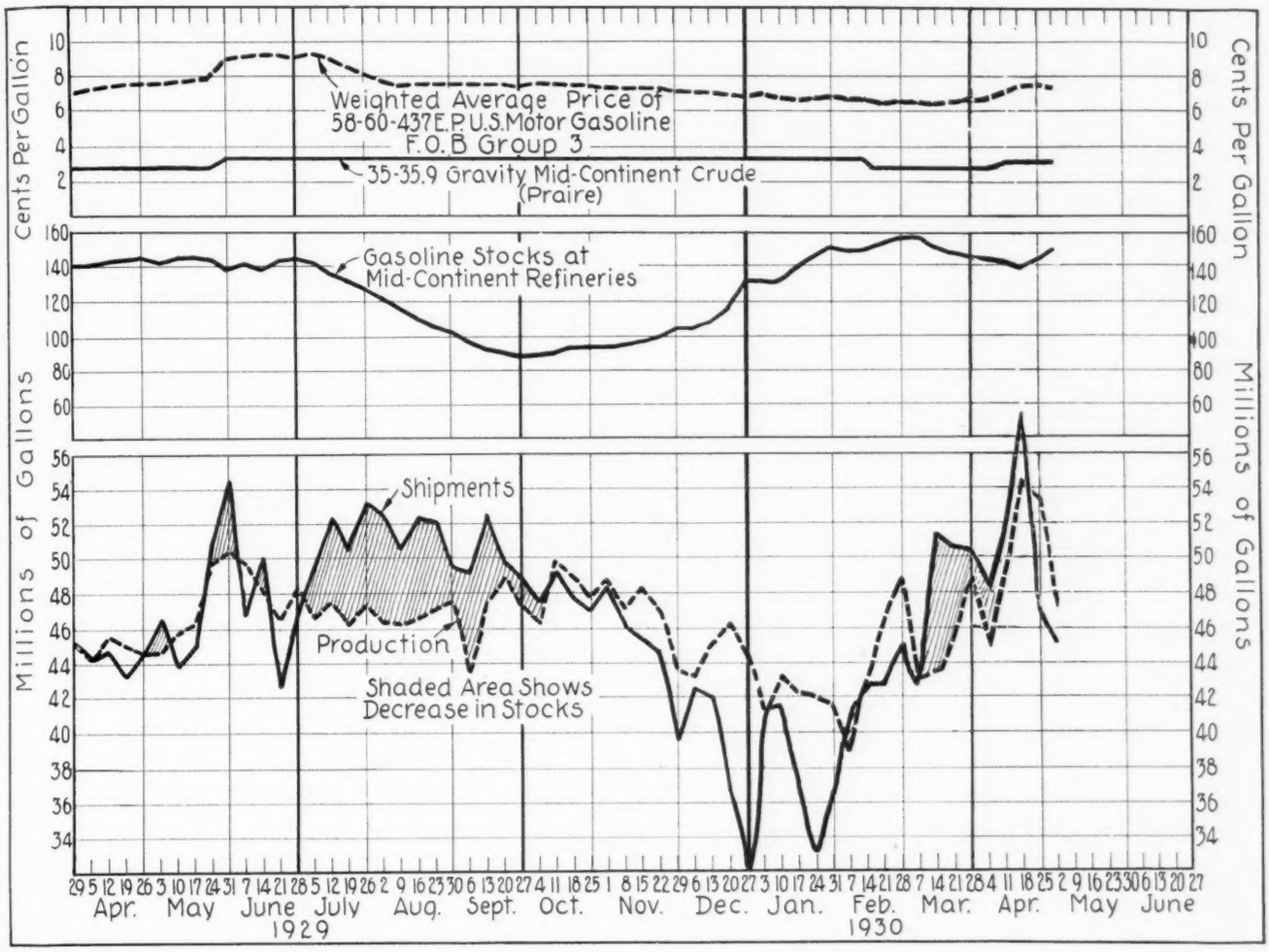
KANSAS

	May 5		**Apr. 28**		**Apr. 21**	
	No. of cars	**Price**	**No. of cars**	**Price**	**No. of Cars**	**Price**
58-60 U. S. Motor, 437 e.p.	No sales reported		1	7.7500	No sales reported	

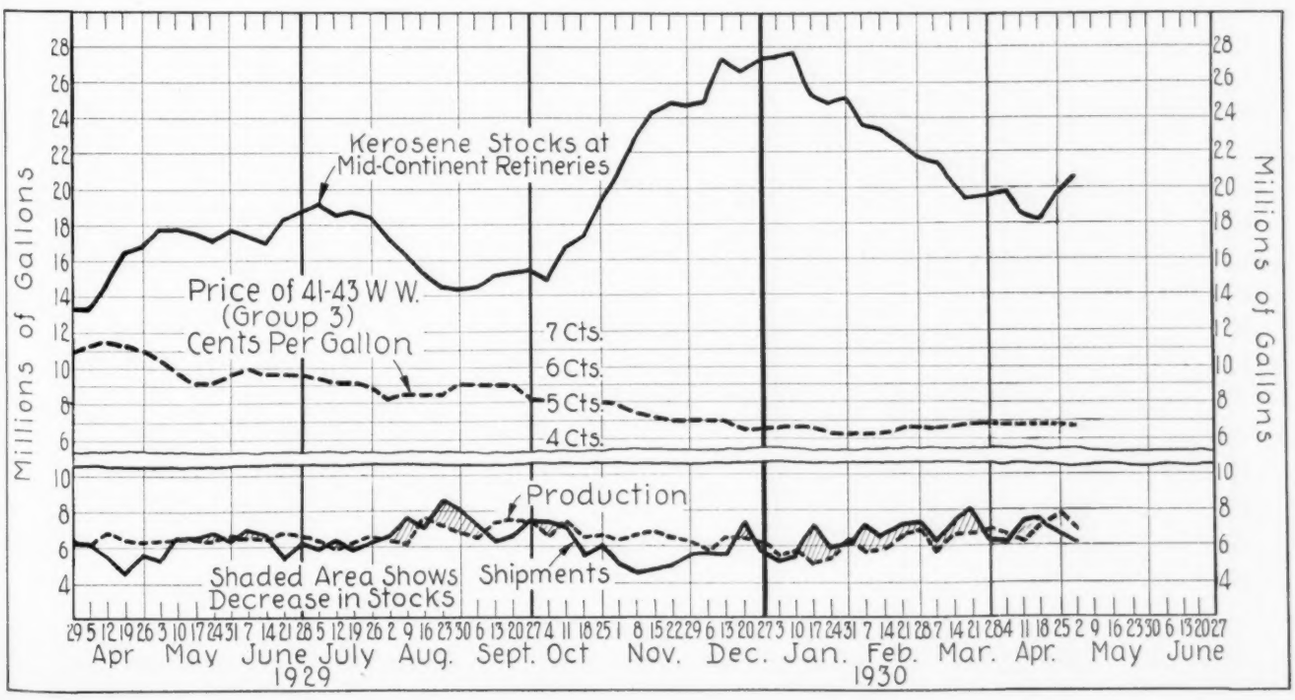
*Full U. S. Motor specifications not guaranteed. Prices represent both quotations and sales.

Barometer of Mid-Continent Refinery Market—Week Ending May 2

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Cents Per Gallon
Weighted Average Price of 58-60-437 E.P.U.S. Motor Gasoline F.O.B Group 3
35-35.9 Gravity Mid-Continent Crude (Praire)
Gasoline Stocks at Mid-Continent Refineries
Millions of Gallons
Shipments
Production
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1929
1930

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 106



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices May 5	Prices Apr. 28	Prices Apr. 21
48-50 450 e.p. naphtha...	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
50-52 450 e.p. naphtha...	7.125– 7.25	7.125– 7.25	7.125– 7.25
56-58 450 e.p. gasoline...	7.00 – 7.25	7.125– 7.25	7.125– 7.25
58-60 450 e.p. gasoline...	7.00 – 7.25	7.25	7.25
64-66 390 e.p. gasoline...	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
68-70 350-360 e.p. gasoline	8.75	8.75	8.75
‡Domestic Aviation Gasoline.....	9.50 –10.50	9.50 –10.50	9.50 –10.50

‡Prices based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% rec. at 221°; 90% at 311°; 96% at 347°; end point, 374°F. Fighting grade in some instances sells at a premium over domestic aviation grade.

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

52-54 Naphtha.....	7.75	7.25 – 7.375	7.25 – 7.375
54-56 Naphtha.....	7.75 – 8.00	7.25 – 7.50	7.25 – 7.50
58-60 U.S. Motor 437 e.p.	8.25 – 8.75	8.00 – 8.50	7.875– 8.25
60-62 400-410 e.p. gasoline	8.50 – 9.00	8.25 – 8.50	8.00 – 8.50
64-66 390 e.p. gasoline....	8.75 – 9.50	8.25 – 8.75	8.25 – 8.50
68-70 350-360 e.p.....	9.25 – 9.75	8.625– 9.50	8.50 – 9.00

OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)

U. S. Motor Gasoline

Ohio, delivery at any point.....	10.50	10.50	10.50

KANSAS (F. o. b. refinery Kansas destination)

60-62 437 e.p. gasoline...	7.875	7.875	7.875
60-62 400 e.p. gasoline...	8.00	8.00	8.00
64-66 375 e.p. gasoline...	8.25	8.25	8.25

NORTH TEXAS (F. o. b. North Texas refineries)

56-58 450 e.p. gasoline...	6.75 – 7.00	7.00	7.00
58-60 450 e.p. gasoline...	6.75 – 7.00	7.00	7.00 – 7.25
58-60 U.S. Motor 437 e.p.	7.125– 7.375	**7.125– 7.375	**7.25 – 7.50
60-62 400 e.p. gasoline...	7.50 – 7.75	7.50 – 7.75	7.50 – 7.75
64-66 390 e.p. gasoline...	7.875– 8.00	7.875– 8.00	7.875– 8.00
64-66 375 e.p. gasoline...	8.00 – 8.25	8.00 – 8.25	8.00 – 8.25
68-70 350-360 e.p. gasoline	8.375– 8.50	8.25 – 8.375	8.25 – 8.375

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment)

50-52 naphtha.....	7.00	7.00	7.00
58-60 437 e.p. gasoline...	7.25	7.25	7.25
58-60 U.S. Motor 437 e.p. gasoline.....	7.50	7.50	7.50

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

58-60 U.S. Motor 437 e. p.	7.75	7.75	7.75

ARKANSAS (Ark., N. La. and Miss. destination)

58-60 U.S. Motor 437 e.p.	7.75	7.75	7.75

CALIFORNIA (3c tax to be added to California gasoline prices if used in state.)

54-58 U.S. Motor 437 e.p.	9.50 –10.50	8.50 – 9.50	7.00 – 7.75
54-58 U.S. Motor, for outside state shipment....	8.00 – 9.00	7.25 – 8.25	6.50 – 7.25
58-61 375-400 e.p. gasoline	10.50 –12.00	9.50 –10.50	8.50 – 9.50
42-45 Engine Distillate 445-480 e.p.....	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA (F. o. b. Oklahoma refineries)

Grade AA, 80-87.9, 90% Recovery.....	6.50 – 6.625	6.50	6.50 – 6.625
Grade A, 72-79.9, 90% Recovery.....	6.50	6.625	6.50 – 6.625
Grade BB, 84-92, 85% Recovery.....	6.50	6.50	6.50 – 6.625
Grade B, 76-83.9, 85% Recovery.....	6.50	6.50	6.50 – 6.625
Grade C, 80-92, 78% Recovery.....	6.50	6.50	6.50 – 6.625

NORTH TEXAS (F. o. b. Breckenridge)

Grade AA, 80-87.9, 90% Recovery.....	6.50	6.50	6.50 – 6.625
Grade A, 72-79.9, 90% Recovery.....	6.50	6.625	6.50 – 6.625
Grade BB, 84-92, 85% Recovery.....	6.50	6.50	6.50 – 6.625
Grade B, 76-83.9, 85% Recovery.....	6.50	6.50	6.50 – 6.625
Grade C, 80-92, 78% Recovery.....	6.50	6.50	6.50 – 6.625

NORTH LOUISIANA (F. o. b. Monroe District)

	Prices May 5	Prices Apr. 28	Prices Apr. 21
Grade AA.....	†7.00	†7.00	†7.00
Grade BB.....	†6.875	†6.875	†6.875
Grade C.....	†6.875	†6.875	†6.875

CALIFORNIA (F. o. b. California refineries)

75-85, 375-390 e.p. blend	7.25 – 8.00	7.25 – 8.00	7.00 – 8.00

BURNING OILS

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

45 w.w. kerosene.....	5.50 – 5.875	5.625– 5.875	5.625– 6.00
46 w.w. kerosene.....	5.75 – 6.25	5.875– 6.25	5.875– 6.25
47 w.w. kerosene.....	6.125– 6.375	6.25 – 6.50	6.25 – 6.50
300 mineral seal.....	6.50 – 7.00	6.75 – 7.00	6.75 – 7.00

OKLAHOMA (F. o. b. Oklahoma refineries)

41-43 w.w. kerosene.....	4.25 – 4.375	4.25 – 4.50	4.25 – 4.50
42-44 w.w. kerosene.....	4.75	4.75 – 5.00	4.75 – 5.00

KANSAS (F. o. b. refinery Kansas destination)

41-43 w.w. kerosene.....	4.875– 5.00	4.875– 5.00	4.875– 5.00
42-44 w.w. kerosene.....	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25

NORTH TEXAS (F. o. b. North Texas refineries)

40-42 w.w. kerosene.....	4.125	4.125	4.125
41-43 w.w. kerosene.....	4.25	4.25	4.25

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

41-43 w.w. kerosene.....	5.00	5.00	5.00
42-44 w.w. kerosene.....	5.25	5.25	5.25

ARKANSAS (Ark., N. La. and Miss. destination)

42-44 w.w. kerosene.....	5.25	5.25	5.25

CALIFORNIA (F. o. b. California refineries)

38-40 w.w. kerosene.....	4.00 – 5.00	4.00 – 5.00	4.00 – 5.00

NEUTRAL OIL

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

Vis.		(Viscosity at 70° F.)	
200 No. 3 Assoc. Filt.....	25.00 –26.00	25.00 –26.00	25.00 –26.00
180 No. 3 Assoc. Filt.....	21.00 –22.00	21.00 –22.00	21.00 –22.00
150 No. 3 Assoc. Filt.....	15.25 –16.50	15.50 –16.50	15.25 –16.50
		(Non Viscous)	
34 Grav. 330-340 Flash..	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50

****OKLAHOMA** (F. o. b. Oklahoma refineries)

Vis.	Color	(Viscosity at 100° F.)		
100—No. 2.....		6.00 – 7.50	6.00 – 7.50	6.00 – 7.50
150—No. 3.....		8.00 – 9.00	8.00 – 9.00	8.00 – 9.00
150—No. 4.....		7.00 – 8.50	7.00 – 8.50	7.00 – 8.50
180—No. 3.....		9.00 –10.50	9.00 –10.50	9.00 –10.50
180—No. 4.....		9.00 –10.00	9.00 –10.00	9.00 –10.00
180—No. 5.....		8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
200—No. 3.....		12.00	12.00	12.00
200—No. 4.....		10.00 –11.50	10.00 –11.50	10.00 –11.50
200—No. 5.....		10.50 –11.00	10.50 –11.00	10.50 –11.00
220—No. 3.....		12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4.....		12.00 –12.50	12.00 –12.50	12.00 –12.50
220—No. 5.....		11.00 –12.00	11.00 –12.00	11.00 –12.00
240—No. 3.....		13.50 –15.50	13.50 –15.50	13.50 –15.50
240—No. 4.....		12.50 –14.50	12.50 –14.50	12.50 –14.50
240—No. 5.....		12.00 –14.00	12.00 –14.00	12.00 –14.00
280—No. 3.....		17.00 –18.00	17.00 –18.00	17.00 –18.00
280—No. 4.....		15.00 –17.00	15.00 –17.00	15.00 –17.00
280—No. 5.....		14.00 –15.50	14.00 –15.50	14.00 –15.50

†Prices nominal ††Only one refiner quoting *Quotations only **Represents Both Sales and Quotations.

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL (F. o. b. Gulf Coastal refineries)

Vis.	Color	Prices May 5	Prices Apr. 28	Prices Apr. 21
		(Viscosity at 100° F., pour test 0)		
100	No. 2 Pale	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00
200	No. 3 Pale	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
300	No. 3 Pale	10.75 –11.00	10.75 –11.00	10.75 –11.00
500	No. 3½ Pale	12.00 –12.25	12.00 –12.25	12.00 –12.25
750	No. 4 Pale	13.50 –13.75	13.50 –13.75	13.50 –13.75
1200	No. 5 Pale	16.00 –16.50	16.00 –16.50	16.00 –16.50
200	No. 5½ Red Oil	8.75 – 9.00	8.75 – 9.00	8.75 – 9.00
300	No. 5½ Red Oil	10.00 –10.25	10.00 –10.25	10.00 –10.25
500	No. 6 Red Oil	11.25 –11.50	11.25 –11.50	11.25 –11.50
750	No. 6 Red Oil	12.75 –13.00	12.75 –13.00	12.75 –13.00
1200	No. 5-6 Red Oil	15.00 –15.25	15.00 –15.25	15.00 –15.25

‡CALIFORNIA (F. o. b. California refineries)

Vis.	Color	(Viscosity at 100° F.)		
100	No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200	No. 3	11.50	11.50	11.50
300	No. 3	13.00	13.00	13.00
450	No. 3	15.50	15.50	15.50
550	No. 3	16.50	16.50	16.50
600	No. 3	17.00	17.00	17.00
200	No. 5	11.00	11.00	11.00
300	No. 5	12.00	12.00	12.00
400	No. 5	14.00	14.00	14.00
500	No. 5	15.00	15.00	15.00
600	No. 5	16.00	16.00	16.00
700	No. 7	18.00	18.00	18.00

‡Neutral oils not manufactured commercially in California.

CYLINDER STOCKS

OKLAHOMA (F. o. b. Oklahoma refineries)

190-200 Vis. D at 210° Brt. St	‡41.00 –42.00	‡41.00 –42.00	41.00 –42.00
150-160 Vis. D at 210° Brt. St., 15-20 cold test	‡37.00	‡37.00	37.00
150-160 Vis. D Brt. Stock, 25-45 cold test	‡36.00 –36.50	‡36.00 –36.50	36.00 –36.50
150-160 Vis. E 210° Brt. St	‡34.00 –35.00	‡34.00 –35.00	34.00 –35.00
600 St. Ref. Olive Green	‡9.00 –10.00	‡9.00 –10.00	9.00 –10.00
600 St. Ref. Dark Green	‡9.00	‡9.00	9.00
Black Oil	5.00	5.00	5.00

‡Prices represent quotations and sales to domestic jobbers only.

PENNSYLVANIA (F. o. b. Western Penna. refineries) (A.S.T.M. Tests)

600 Steam Refined, filterable	21.00 –23.00	23.50 –24.50	23.50 –24.50
650 Steam Refined	28.00 –30.00	29.00 –31.00	29.00 –31.00
600 Flash	31.00 –33.00	31.00 –33.00	31.00 –33.00
630 Flash	35.00 –36.50	35.00 –36.50	35.00 –36.50
600 Warren E	29.50 –30.00	29.50 –30.00	29.50 –30.00
600 Oil City E	29.00 –29.50	29.00 –29.50	29.00 –29.50
600 D Filtered	34.00 –35.00	34.00 –35.00	34.00 –35.00
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	39.00 –41.00	39.00 –41.00	39.00 –41.00
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	38.00 –40.00	38.00 –40.00	38.50 –40.00

WAX

PENNSYLVANIA (Per pound, F. o. b. New York)

122-124 white crude scale, a.m.p.	2.50 – 2.625	2.60 – 2.625	2.625
124-126 white crude scale, a.m.p.	2.50 – 2.625	2.60 – 2.625	2.625

****OKLAHOMA** (Per pound in barrels; in a few instances, per pound in burlap bags; F. o. b. Oklahoma refineries)

124-126 White Crude Scale, a.m.p.	2.375	2.375	2.375– 2.50

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	4.00 – 4.375	4.00 – 4.375	4.00 – 4.375
30-34 fuel oil	3.75 – 4.00	4.00 – 4.125	4.00 – 4.125
28-32 fuel oil	3.75 – 4.00	4.00 – 4.125	4.00 – 4.125

†Prices nominal ††Only one refiner quoting *Quotations only

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices May 5	Prices Apr. 28	Prices Apr. 21
38-40 straw distillate	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
36-38 straw distillate	2.875	2.875	2.875
32-36 straw gas oil	2.50 – 2.75	2.50 – 2.75	2.50 – 2.75
32-36 straw gas oil zero	3.00	3.00	3.00
32-36 dark gas oil	2.375– 2.50	2.375– 2.50	2.375– 2.50
32-36 dark gas oil zero	2.50 – 2.75	2.50 – 2.75	2.50 – 2.75
28-30 zero fuel oil (per bbl.)	$0.90 – 0.95	$0.90 – 0.95	$0.90 – 0.95
28-30 fuel oil (per bbl.)	$0.875– 0.90	$0.875– 0.90	$0.875– 0.90
26-28 fuel oil (per bbl.)	$0.825– 0.875	$0.825– 0.875	$0.825– 0.875
24-26 fuel oil (per bbl.)	$0.775– 0.80	$0.775– 0.80	$0.775– 0.80
22-26 fuel oil (per bbl.)	$0.65 – 0.75	$0.70 – 0.75	$0.70 – 0.75
18-22 fuel oil (per bbl.)	$0.60 – 0.65	$0.60 – 0.65	$0.625– 0.675
16-20 fuel oil (per bbl.)	$0.55 – 0.60	$0.55 – 0.60	$0.55 – 0.60
14-16 fuel oil (per bbl.)	$0.50 – 0.575	$0.50 – 0.575	$0.50 – 0.60

KANSAS (F. o. b. refinery Kansas destination)

38-40 straw distillate	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
36-38 straw distillate	3.25	3.25	3.25
32-36 straw gas oil	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
18-22 fuel oil (per bbl.)	$0.80 – 0.85	$0.80 – 0.85	$0.80 – 0.85
10-14 fuel oil (per bbl.)	$0.725– 0.775	$0.725– 0.775	$0.725– 0.775

NORTH TEXAS (F. o. b. North Texas refineries)

38-40 straw distillate	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
38-40 p.w. treated distillate	3.25	3.25	3.25
32-36 gas oil, cracked	2.50	2.50	2.50
32-36 St. reduced gas oil	2.375– 2.50	2.375– 2.50	2.375– 2.50
24-26 fuel oil (per bbl.)	$0.60 – 0.65	$0.60 – 0.65	$0.60 – 0.65
20-24 fuel oil (per bbl.)	$0.50 – 0.55	$0.55	$0.55
18-22 fuel oil (per bbl.)	$0.45 – 0.50	$0.45 – 0.50	$0.50

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment)

34-38 gas oil	2.50 – 2.75	2.50 – 2.75	2.50 – 2.75
30-32 gas oil	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
28-30 zero gas oil	2.50 – 2.875	2.50 – 2.875	2.50 – 2.875
18-22 fuel oil (per bbl.)	$0.60 – 0.80	$0.60 – 0.80	$0.60 – 0.80

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	2.75	3.00	3.00
30-32 gas oil, straw	2.75	3.00	3.00
14-16 fuel oil (per bbl.)	$0.75 – 0.85	$0.75 – 0.85	$0.75 – 0.85

ARKANSAS (Ark., N. La. and Miss. destination)

30-32 gas oil, straw	2.75	2.75	3.00
32-36 dark gas oil	2.75	2.75	3.00
28-30 gas oil	2.50	2.50	2.75
20-24 fuel oil (per bbl.)	$0.95	$0.95	$0.95
9-12 fuel oil (per bbl.)	$0.75	$0.75	$0.75
Black oil	3.25	3.25	3.25

CALIFORNIA (F. o. b. San Joaquin Valley. Nominal pipe line charge to San Francisco 24c per bbl. more and to San Pedro 20c per bbl. more.)

14-18 fuel oil (per bbl.)	$0.50 –$0.65	$0.50 –$0.65	$0.50 –$0.65
14-18 Bunker oil (per bbl.)	$0.70 –$0.80	$0.70 –$0.75	$0.70 –$0.75
30-34 gas oil (per bbl.)	$0.80 –$1.00	$0.85 –$1.05	$0.80 –$0.95
27 Plus Diesel oil (per bbl.)	$0.80 –$0.95	$0.85 –$1.00	$0.80 –$0.95

PETROLATUMS

PENNSYLVANIA (Per pound, in barrels, carload lots, f. o. b. refinery. In tank cars ⅝c to ¾c per pound less.) Two refiners quoting.

Snow White	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
Lily White	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
Cream White	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
Light Amber	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
Amber	3.25 – 3.375	3.25 – 3.375	3.25 – 3.375
Red	3.00	3.00	3.00

PETROLEUM COKE

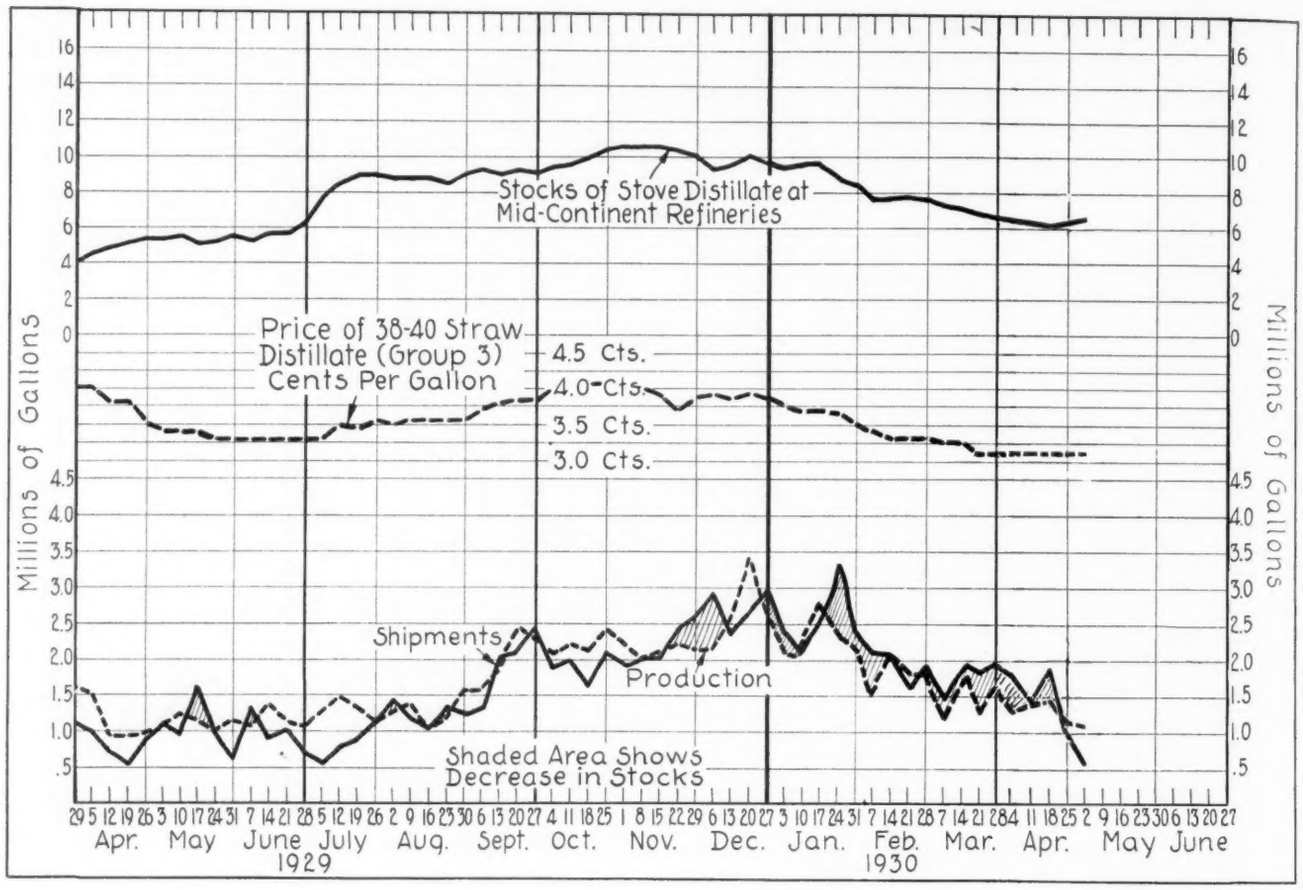
****OKLAHOMA** (F. o. b. Oklahoma refineries)

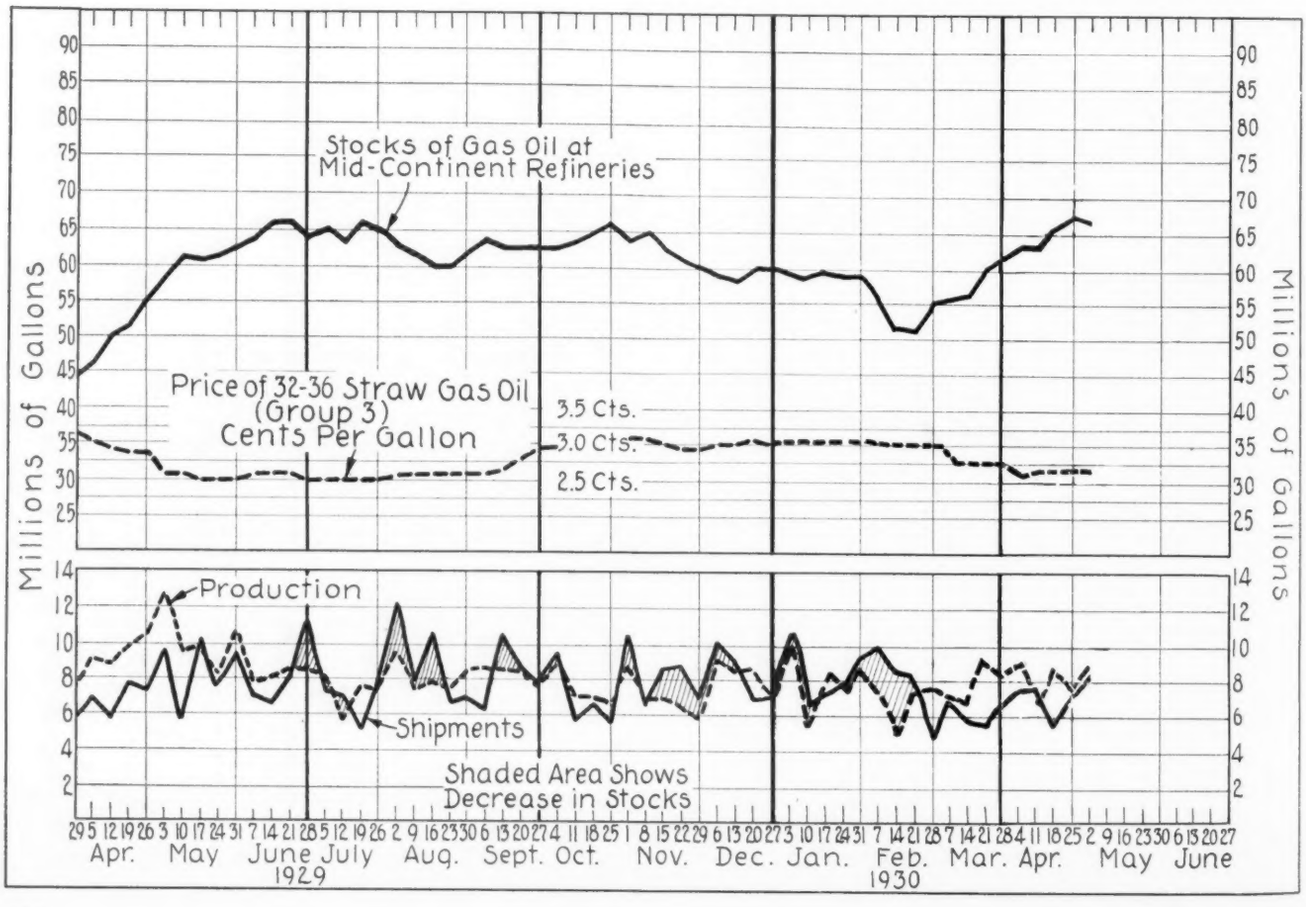
	(Per ton in car lots)		
Lump	$4.50 – 5.00	$4.50 – 5.00	$4.50 – 5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

**Represents Both Sales and Quotations.

Barometer of Mid-Continent Refinery Market—Week Ending May 2

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Millions of Gallons
Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallon
4.5 Cts.
4.0 Cts.
3.5 Cts.
3.0 Cts.
Shipments
Production
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1929
1930


Millions of Gallons
Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Straw Gas Oil (Group 3) Cents Per Gallon
3.5 Cts.
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Production
Shipments
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1929
1930

BALCRANK

New ELECTRIC LUBRICATORS

that have a PUNCH *in* 'EM

Balcrank Type D. Chassis Lubricator, foot operated — develops up to 6,000 lbs. pressure with any grease, in any weather, on any system. Capacity 13 lbs.

Balcrank Type F. Chassis Lubricator, air operated, the fastest large capacity gun ever built. 6,000 lbs. pressure, each shot automatically controlled; 13 lb. capacity.

Balcrank Centrally Located Multiple Outlet Electric Lubricators serve any size station —tank capacities 100 and 600 lbs. . . . uses standard Balcrank Booster Gun.

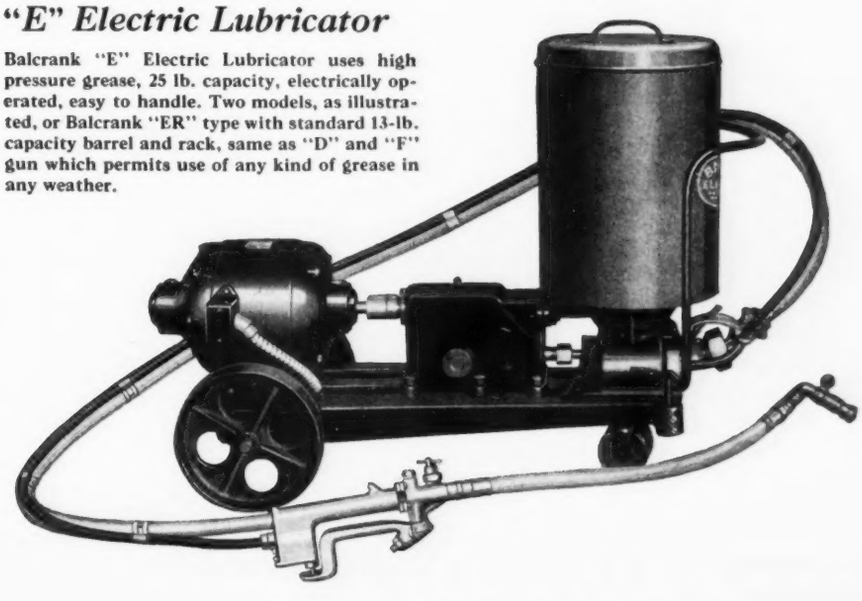
Balcrank P. C. Chassis Lubricator, one lb. grease capacity, air operated, sends any grease into any system, in any weather, with a pressure up to 6,000 lbs.

Balcrank Booster Gun, famous for its terrific pressure, up to 6,000 lbs., air operated, used with Balcrank Central Units serving super-service stations and lubritoriums.

Balcrank Electric Chassis Lubricators have a punch in 'em . . . not only in smashing grease into a bearing . . . but in building up sales confidence with the automobile owner who sees these marvelous electric chassis lubricators operate. He *knows his car is greased* when a Balcrank does the work. The Balcrank reputation is worth considering . . . whether you are in the market for an electric lubricator . . . central unit . . . air or manually operated lubricator. Balcranks *must be good* to have achieved their world wide reputation for superiority. And, there is a complete line of these smoother, faster operating, harder hitting and more profitable lubricators for you to choose from. The Cincinnati Ball Crank Co., Cincinnati, Ohio.

The New Balcrank "E" Electric Lubricator

Balcrank "E" Electric Lubricator uses high pressure grease, 25 lb. capacity, electrically operated, easy to handle. Two models, as illustrated, or Balcrank "ER" type with standard 13-lb. capacity barrel and rack, same as "D" and "F" gun which permits use of any kind of grease in any weather.



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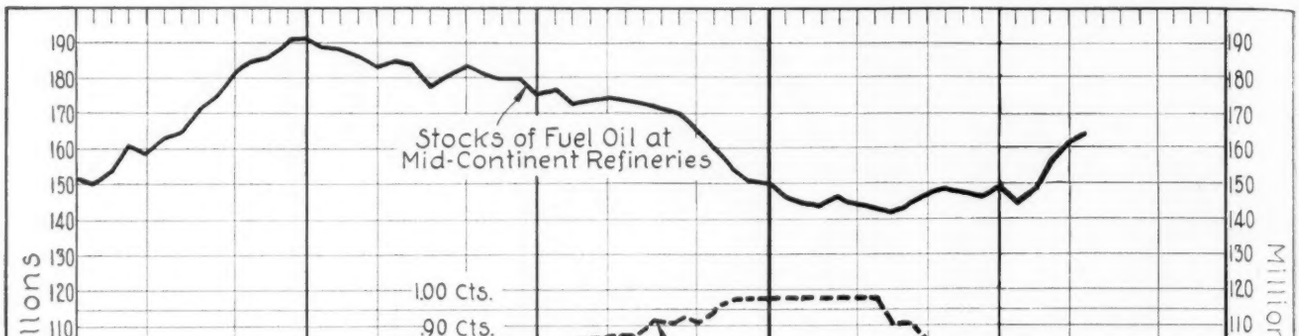

California Refinery Market

Market Unsettled Despite Better Prices

LOS ANGELES, May 3

A CONDITION of unrest prevailed in California markets, notwithstanding a slightly better price structure on several commodities in both the domestic and export branches of the industry.

Several members of the California trade reported a renewal of the inquiry from an English buyer for approximately 425,000 barrels of U. S. Motor gasoline. For the most part this inquiry was taken to be an exploratory nature, as the offered price was reported to be 6.50 cents, in line with Standard Oil Co. of California's recently announced posted price for motor gasoline.

Although no spot sales have been reported for export gasoline, it was the opinion of the trade that if a cargo of this commodity were available at 6.50 cents the California company would get it.

A Japanese buyer, reported to be in the California market for approximately 70,000 barrels of crude oil, created some interest among California refiners. No figures were available as to the price the buyer was offering for the oil but since the inquiry was broadcast among members of the trade it was expected the deal would be closed at a low figure.

An independent refiner was reported to be out to get Pacific coast bunker and diesel oil business at practically any price, with the result that quotations for these commodities suffered slightly. This member of the local trade was said to be making one and two-year contracts for bunker "C" fuel oil at $0.60 to $0.65 per barrel delivered aboard ship.

Two spot sales of diesel oil for export were reported at between $0.75 and $0.80, although previous minimum quotations had been $0.80 per barrel.

California marketing officials, in checking over the results of the recent "gas-war" that was undertaken as a move to retain their gallonage, failed to see where the anticipated benefits had been obtained.

A slight improvement was noted during the past week in the retail situation, but several independent refiners continued to make tank truck deliveries at from 1 to 4 cents under the tank wagon price of 15.50 cents maintained by major companies in the Los Angeles Basin.

With the exception of U. S. Motor, quotations in local tank car markets remained unchanged from those quoted the previous week.

Motor gasoline for use within the state moved generally at 9.50 to 10.50 cents per gallon, without tax, although one or two spot sales of a car or so were reported at 9 cents. For distribution to points in adjoining states, gasoline moved at from 8 to 9 cents, with little demand and few spot sales reported.

Gulf Coast Lubes Unchanged

HOUSTON, May 5.—Conditions were unchanged in the Houston district tank car markets affecting jobber sales of Gulf Coastal lubricants. Prices have been maintained over a period of weeks. Demand is about normal for the season.

Pennsylvania Market

Prices Hold Despite Crude Cut

CLEVELAND, May 5.—The 25-cent reduction in Pennsylvania crude last week came as the greatest surprise the eastern trade has had in many a month. The market for refined oils in western Pennsylvania was thrown into a decidedly unsettled state which lasted the two remaining days of the week following the cut.

The trade was at first perplexed over the Seep Agency's action in cutting the price of crude at this time. Prices of both crude and refined oils have been advancing in practically every other market in the country.

Upon surveying the situation more thoroughly, it was thought in some quarters that the Seep Agency's action was taken in an effort to get refiners to take more crude. In one instance, it was said, a Pennsylvania refinery which normally runs between 1500 and 2000 barrels of crude per day, ran a total of only 6000 barrels in the entire month of April.

Greatly reduced operations, the trade said, accounted for the relatively good position of refined oil prices in the Pennsylvania market at this time.

The immediate effect of the crude reduction was to bring trading of practically all commodities to a halt. And trading of gasoline and one or two other products had been unusually active up to that time. Prices were hurt very little by the cut.

Prior to the crude cut, the volume of U. S. Motor gasoline available under 8.50 cents was diminishing rapidly although it still was a market factor. More of this grade appeared on the market at 8.25 cents Friday and Saturday, but at that the trade generally was of the opinion that gasoline hadn't lost any ground to speak of. Increased consumption, which is just around the corner they felt, would bring sufficient buying from jobbers to take the larger runs from refineries which will naturally come with raw material costs down.

Following the crude cut, considerable distress kerosene was offered and the general market dropped 0.125 to 0.25 cent. The 45 w.w. grade was offered at 5.50 cents.

Steam refined cylinder stocks suffered the most from the crude cut. Filterable 600 steam refined sold as low as 21 cents late last week against a minimum of 23 cents which had prevailed up to that time.

Bright stock demand continued slow. Small lots of No. 8 color oil still were available at 39 to 39.50 cents a gallon. Several companies quoted 40 cents but reported only a few sales at this figure.

Wax sold 0.125 cent lower at 2.50 cents per pound, New York.

COLOR INCREASES SALES

It's *attractively* different when colored with

DYKEM RED B

A DEEP BLUISH RED

Sample and price cheerfully submitted

DYESTUFFS & CHEMICALS, INCORPORATED

11th & MONROE STS. ST. LOUIS, MO.

Skilled Supervision

Guarantees the Quality of Gulf Products

COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
NAPHTHA — GAS — OILS
WAX — PETROLEUM COKE
CYLINDER — ENGINE — CORDAGE

Gulf Refining Company

General Sales Offices
PITTSBURGH, PA.

District Sales Offices
New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

Eastern Domestic Markets

T.W. Advances Aid Gasoline Markets

Staff Special
NEW YORK, May 3

ADVANCING retail markets in Standard Oil Co. of New York territory gave new life to tank car gasoline markets in northern sections of the Atlantic seaboard the past week.

Standard's 1-cent advance generally throughout its territory on April 29 was followed the next day by an additional advance of 1 to 2 cents in the upper part of New York state. Retail markets in the Standard's territory ended April 2 to 4 cents higher inasmuch as a 1-cent general advance had been made earlier in the month.

Immediately following the tank wagon increase of the past week, the majority of sellers at New York harbor and in New England advanced their tank car prices for U. S. Motor from 0.25 to 1 cent a gallon. Quotations for this grade at New York harbor ranged as high as 10 cents a gallon. No sales were reported at this figure, however. The bulk of U. S. Motor sold the past week went within the range of 8.25 to 8.75 cents.

New England refiners, the majority of whom had their spot tank car prices based on retail markets advanced their quotations 1 cent. These prices, however, were cut back at the end of the week because of competition from New York harbor. The competition caused at least one refiner in the Boston district to quote on the basis of 8.25 cents, f.o.b. New York. Prices in effect in Boston and Providence at the end of the week were 10.125 to 10.50 cents, delivered, and 10.50 to 10.80 cents, delivered, in Portland.

California gasoline moved upward also. The highest price of 9 to 9.50 cents was current in New York harbor while Philadelphia suppliers quoted 9 cents and Baltimore sellers, 8.50 to 9 cents. One company at New York quoted 10 cents but reported no business had been done at that figure.

As a result of only a few companies raising their prices, all markets were unsettled at the end of the week. In some districts in New England posted prices were being shaded, it was reported, and some of the trade expected to see open recessions in quotations. Markets at New York and more southern points were on a sounder basis but there were unconfirmed reports of posted prices being shaded at New York and Philadelphia.

To rectify the price shading, the trade looks to better weather which would increase the number of spot orders. Many jobbers who were foresighted enough to see that marketing conditions were better and that prices probably would advance, took advantage of buying over May at prices in effect the latter part of April, and consequently they will not be active in the market again until consumption has increased materially. A spell of good motoring weather would clear some of this storage, the trade believed, and force these accounts into the market for additional gasoline.

The Standard not only paved the way for higher tank car prices in most of New York state and New England by the 1-cent advance, but also opened up territory upstate for New York harbor refiners. These districts were virtually barred to the New York harbor seller because of the low tank wagon markets previously in effect.

The trade continued to view with optimism the report that the Standard of New Jersey would raise tank wagon prices throughout its territory but benefit to the market from that source had not materialized up to the end of the week. Many of the trade base their opinions that the Jersey company will make a change on the fact that its prices were slightly below those now prevailing in the adjacent territory of the New York company.

Other commodities were unchanged in price. In spite of the warmer weather several refiners have reported a good demand for heating oils and only occasional reports were heard of price shading. A New England refiner was offering gas oil contracts over next season, protecting the buyer with a maximum price of 5.75 cents. His maximum price for furnace oil over that period is 6.75 cents.

Bunker oil has been moving well in all districts with industrial users contracting for the coming year's requirements. Several suppliers quoted $1.15 per barrel on these contracts with a maximum guarantee to the buyer of $1.35 per barrel.

Gulf Coast Markets

Coastwise Motor Quoted 0.25 Cent Lower

Staff Special
NEW YORK, May 3

GULF markets continued inactive in the past week. Prices for the most part were unchanged although U. S. Motor gasoline for coastwise movement was offered lower and Panuco crude oil moved down slightly.

U. S. Motor gasoline for domestic shipment from Texas and Louisiana terminals dropped 0.25 cent late in the week. It was offered at 7.25 to 7.50 cents against a minimum of 7.50 cents earlier in the week.

Quotations for U. S. Motor have been largely nominal for some time past due mostly to the fact that demand from domestic buyers has been practically nil. A large eastern refiner, however, entered the market the past week and received quotations of 7.25 cents from several sources.

Many of the trade expect to see increased interest in the Gulf market on the part of domestic buyers in the next few weeks, although they feel there is little chance for prices advancing until tank car prices on the east coast improve considerably.

Panuco crude oil was offered 2 cents a barrel lower at $0.68 the past week. Some of the trade were of the opinion that this price might be bettered slightly on firm offer. Several sellers continued to ask $0.70 per barrel. Demand for Panuco crude has lagged, according to reports, although contract shipments have held up fairly well.

Gulf refiners have not as yet publicly adopted a new price schedule for bunker C fuel oil contracts, although there have been numerous rumors to the effect that they have. Standard Oil Co. of New Jersey reported that such a move was under consideration but would not say when, or if, it would become effective.

According to some of the trade, several companies have under consideration a plan whereby the buyer will be guaranteed that his price will not be more than 20 cents above the spot market on the date the contract is negotiated. The current maximum guarantee is 15 cents above the spot price on the date the contract is signed.

Wax Markets

Scale Prices Continue Downward

NEW YORK, May 3.—Wax markets generally were unchanged the past week although there were downward price revisions for one or two grades. Demand from foreign and domestic buyers continued light and total sales for the week were at a minimum.

Yellow crude scale quotation slipped in both the New York and Gulf markets to include 2.375 cents in the price range where, a week ago, the price was 2.50 cents flat. White crude scale in the New York market was available at 2.50 cents a pound, a decline of 0.5 cent under the previous week's low. In both markets 128-130 A.m.p. fully refined was quoted at 3.875 cents minimum, a reduction of 0.125 cent compared with prices of a week ago.

"The market is very slow," was the report heard from all sides—from refiners and brokers alike. A few sellers reported sales of small lots for prompt shipment early in the week but later on there was a complete cessation of buying traders said. There were practically no inquiries received from abroad for forward shipment. One or two buyers appeared willing to purchase ahead but their ideas of prices were very low compared with those of refiners and no business resulted from these inquiries. These buyers were not thought to be short of material but were believed to be seeking bargain lots only.

There were reports of 2.50 cents being shaded for white crude scale at the Gulf early in the week, but these reports lacked confirmation. Some of the trade believed scale could be purchased under that figure but none had business in hand on which to seek a firm offer. A small lot of off-white crude scale was offered at 2.45 cents, f.a.s. New York, but had not been sold up to the end of the week, as far as could be learned.

Several of the trade believed there was no occasion for alarm in the Bureau of Mines report of an increase of approximately 18,000,000 pounds in wax stocks during March. The amount of wax in the hands of anxious sellers is negligible, they believed, and it would take but a small amount of buying to boost prices.

Not only would it boost prices, but they believed it would result also in the immediate entrance into the market of foreign purchasers who now are merely lookers-on, ready to take advantage of lower markets but who will buy only on a hand-to-mouth basis until they are convinced the bottom has been reached.

Edwards "DIXIE" Model

Filling Station

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Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of sales and quotations. Prices shown below do not include inspection tax levied in some states.)

	Prices May 5	Prices Apr. 28	Prices Apr. 21
U. S. MOTOR GASOLINE			
New York harbor	8.25 – 8.75	†8.00 – 8.50	†8.00 – 8.50
Portland district	**10.50–10.80	*9.80	*9.80
Boston district	**10.125–10.50	*9.50	*9.50
Providence district	**10.125–10.50	*9.50	*9.50
Philadelphia district	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
Baltimore district	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
Norfolk district	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
Charleston district	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
Savannah district	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
Jacksonville district	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
CALIFORNIA, U. S. MOTOR GASOLINE			
New York harbor	9.00 – 9.50	†8.50 – 9.00	†8.50 – 9.00
Philadelphia district	9.00	8.50	8.50
Baltimore district	8.50 – 9.00	8.50	8.50
‡DOMESTIC AVIATION GASOLINE			
New York harbor	11.50 –12.50	11.50 –12.50	11.50 –12.50
Philadelphia	11.50	11.50	11.50
Baltimore	11.50 –12.50	11.50 –12.50	11.50 –12.50
Boston	11.50 –12.50	11.50 –12.50	11.50 –12.50

‡Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122°F.; 50% recovery at 221°; 90% at 311°; 96% at 347°; end point 374° F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

WATER WHITE KEROSENE			
New York harbor	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75
Philadelphia district	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75
Baltimore district	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75
GAS OIL: 28-34 Gravity			
New York harbor	4.75 – 5.25	4.75 – 5.25	4.75 – 5.25
Boston district	4.75 – 5.25	4.75 – 5.25	4.75 – 5.25
FURNACE OIL: 36-40 Gravity			
New York harbor	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
Boston district	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
GRADE C BUNKER OIL (Lighterage 5c per bbl. additional)			
New York Harbor	$1.15	$1.15	$1.15
Boston district	$1.15	$1.15	$1.15
DIESEL OIL			
New York harbor	$2.00 –$2.10	$2.00 –$2.10	$2.00 –$2.10

*Minimum delivered. †Nominal. **Delivered prices.

New York Export Market

(Lubricating oils are per gal. in bbls. F.a.s. New York)

	May 5	Apr. 28	Apr. 21
CYLINDER OILS (Pennsylvania Products)			
Bright stock, dark	45.00 –47.00	45.00 –47.00	45.00 –47.00
600 D filtered	38.75 –40.00	38.75 –40.00	38.75 –40.00
600 Warren E filtered	35.00 –37.00	35.00 –37.00	35.00 –37.00
600 s.r. unfiltered	28.50 –29.50	28.50 –29.50	28.50 –29.50
650 s.r. unfiltered	35.00 –37.00	35.00 –37.00	35.00 –37.00
600 flash, s.r.	37.50 –40.00	37.50 –40.00	37.50 –40.00
630 flash, s.r.	42.50 –44.00	42.50 –44.00	42.50 –44.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00 –21.00	20.00 –21.00	20.00 –21.00
250 vis. No. 6 color	17.50 –18.50	17.50 –18.50	17.50 –18.50
200 vis. No. 6 color	16.50 –17.50	16.50 –17.50	16.50 –17.50
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	23.00 –24.00	23.00 –24.00	23.00 –24.00
180 vis. No. 3¼ color	19.00	19.00	19.00
100 vis. No. 2¼ color	15.50 –16.00	15.50 –16.00	15.50 –16.00
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	30.00	30.00	30.00
500 vis. No. 6½ color	26.50 –27.50	26.50 –27.50	26.50 –27.50
400 vis. No. 7¼ color	23.00 –25.00	23.00 –25.00	23.00 –25.00
300 vis. No. 6 color	20.00 –22.00	20.00 –22.00	20.00 –22.00
200 vis. No. 6 color	18.00 –20.00	18.00 –20.00	18.00 –20.00

Wax Markets

(Prices in cents per pound, A.S.T.M. tests; A.M.P. F.a.s. carload lots)

NEW YORK	May 5	Apr. 28	Apr. 21
124-126 Yellow crude scale	2.375– 2.50	2.50	2.50
122-124 White crude scale	2.50 – 2.625	2.55 – 2.625	2.625
124-126 White crude scale	2.50 – 2.625	2.55 – 2.625	2.625
123-125 Fully refined	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
125-127 Fully refined	3.75 – 3.875	3.75 – 3.875	3.75 – 3.875
128-130 Fully refined	3.875– 4.125	4.00 – 4.125	4.00 – 4.125
130-132 Fully refined	4.25 – 4.50	4.25 – 4.50	4.50
133-135 Fully refined	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
135-137 Fully refined	5.50	5.50	5.50 – 5.75
NEW ORLEANS			
124-126 Yellow crude scale	2.375– 2.50	2.50	2.50
122-124 White crude scale	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
124-126 White crude scale	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
123-125 Fully refined	3.50	3.50	3.50
125-127 Fully refined	3.75	3.75	3.75
128-130 Fully refined	3.875– 4.00	4.00	4.00
130-132 Fully refined	4.25 – 4.375	4.25 – 4.375	4.375
133-135 Fully refined	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. or more unless otherwise noted. Bulk gasoline and kerosene prices are posted quotations of the Export Petroleum Assoc., Inc., governing about 90% of the gasoline and kerosene shipped to foreign ports from the Gulf)

	Prices May 5	Prices Apr. 28	Prices Apr. 21
GASOLINE			
U. S. Motor	8.00	8.00	8.00
60-62, 400 e.p.	9.00	9.00	9.00
61-63, 390 e.p.	9.25	9.25	9.25
64-66, 375 e.p.	9.50	9.50	9.50
U. S. Motor, cases (cargoes)	$1.85	$1.85	$1.85
64-66, cases (cargoes)	$2.00	$2.00	$2.00
KEROSENE			
44 water white	7.00	7.00	7.00
41-43 prime white	6.00	6.00	6.00
Water white, cases (cargoes)	$1.75	$1.75	$1.75
Prime white, cases (cargoes)	$1.65	$1.65	$1.65
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
*30 plus translucent gas oil	3.875– 4.00	3.875– 4.00	3.875– 4.00
Grade C bunker oil	$1.05	$1.05	$1.05
Grade C bunker oil, cargoes	$0.75 –$0.80	$0.75 –$0.80	$0.75 –$0.80

*Less than ½ of 1% sulphur.

MEXICAN CRUDE AND BUNKER OILS (f. o. b. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$0.68 –$0.70	$0.70	$0.70
Grade C bunker oil for bunkering purposes, taxes paid	$1.00	$1.00	$1.00
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F. cold test 0 Tanker, f. o. b. Houston)			
100 vis. No. 2 unfiltered pale	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
200 vis. No. 3 unfiltered pale	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300 vis. No. 3 unfiltered pale	8.875– 9.50	8.875– 9.50	8.875– 9.50
500 vis. No. 3½ unfiltered pale	10.25 –11.25	10.25 –11.25	10.25 –11.25
750 vis. No. 4 unfiltered pale	12.50 –12.75	12.50 –12.75	12.50 –12.75
1200 vis. No. 5 unfiltered pale	16.00 –18.00	16.00 –18.00	16.00 –18.00
200 vis. No. 5-6 red oil	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
300 vis. No. 5-6 red oil	8.375– 8.50	8.375– 8.50	8.375– 8.50
500 vis. No. 5-6 red oil	9.25 – 9.50	9.25 – 9.50	9.25 – 9.50
750 vis. No. 5-6 red oil	11.50	11.50	11.50
1200 vis. No. 5-6 red oil	15.00 –15.25	15.00 –15.25	15.00 –15.25

Gulf Domestic Market

(Prices are f.o.b. Gulf oil terminals in Texas and Louisiana in shipments of 20,000 bbls. or more, representing sellers' opinions, for domestic shipment only.)

	May 5	Apr. 28	Apr. 21
U. S. Motor gasoline	7.25 – 7.50	7.50	7.50
41-43 w.w. kerosene	5.875– 6.25	5.875– 6.25	5.875– 6.25
*26-32 translucent gas oil	3.75 – 4.00	3.75 – 4.00	3.75 – 4.00

*Less than ½ of 1% sulphur.

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	May 5	Apr. 28	Apr. 21
Gasoline, U. S. Motor, 53-55 Gravity	6.50 – 7.50	6.00 – 7.00	6.00 – 7.00
Gasoline, U. S. Motor-blends and special cuts	7.25 –10.00	7.25 –10.00	7.25 –10.00
Gas Oil, 30-34, per barrel	$0.80 –$1.00	$0.80 –$1.05	$0.80 –$1.05
Diesel Oil, 27 plus, per barrel	$0.80 –$1.00	$0.75 –$1.00	$0.75 –$1.00
Bunker oil, 14-18, per barrel	$0.65 –$0.85	$0.65 –$0.85	$0.65 –$0.85
Fuel oil, 14-18 per barrel	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.00 – 6.00	5.00 – 6.00	5.00 – 6.00
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125-150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

†**Note:** Above Pacific Export market prices for gasoline and kerosene in cargo lots apply only on goods for coastwise shipment. Gasoline and kerosene prices for shipment to foreign ports are determined as follows: Difference in freight between U. S. Gulf to European Continent and California to European Continent —this difference plus 0.125c for handling, deducted from prices posted at U. S. Gulf by the Export Petroleum Assoc., Inc., which are above prices.

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	May 5 Crude &/or Fuel	Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	40	42/6
Gulf to U. K. or Continental ports*	26-28	30-31
North Atlantic to U. K. or Continental ports*	23/6-25	27-28
Calif. to North Atlantic ports (not E. of N. Y.)	$0.90-$1.00	$1.00-$1.10
Gulf to North Atlantic ports (not E. of N. Y.)**	40	40

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.

**Venezuela loading same rate. For Tampico 3c to 4c per bbl. addition.

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Tank Wagon, Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect May 5, 1930, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline		Gasoline Total		Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	14.5	2	16.5	18.5	13.5
Newark, N. J.	13.5	2	15.5	17.5	12.5
Annapolis	14	4	18	20	13
Baltimore, Md.	13.2	4	17.2	19.2	10.5
Cumberland, Md.	15	4	19	21	14
Washington, D. C.	13.7	2	15.7	17.7	12.7
Danville, Va.	14.8	5	19.8	21.8	13.8
Norfolk, Va.	13.3	5	18.3	20.3	12
Richmond, Va.	13.7	5	18.7	20.7	12.7
Roanoke, Va.	15	5	20	21	14
Petersburg, Va.	14.3	5	19.3	21.3	13.3
Charleston, W. Va.	14.5	4	18.5	20.5	12.5
Keyser, W. Va.	15.1	4	19.1	21.1	14.1
Parkersburg, W. Va.	13.2	4	17.2	19.2	11.2
Wheeling, W. Va.	14.4	4	18.4	20.4	12.4
Charlotte, N. C.	14.3	5	19.3	20.3	14.3
Hickory, N. C.	15.8	5	20.8	22.8	14.8
Mt. Airy, N. C.	15.5	5	20.5	22.5	14.5
Salisbury, N. C.	15.7	5	20.7	20	14.7
Charleston, S. C.	13.3	6	19.3	21.3	12.3
Columbia, S. C.	15.2	6	21.2	23.2	14.2

Note: 2c per gallon discount off t.w. price of gasoline to dealers and commercial consumers thru S. O. New Jersey territory.

CONTINENTAL OIL

Denver, Colo.	13	4	17	20	15.5
Pueblo, Colo.	14	4	18	21	15.5
Grand Junc., Colo.	19	4	23	26	19
Casper, Wyo.	15	4	19	22	14
Cheyenne, Wyo.	16.5	4	20.5	23.5	15.5
Butte, Mont.	19.5	5	24.5	27.5	20
Helena, Mont.	19.5	5	24.5	27.5	20
Salt Lake City, Utah	16.5	3½	20	20	17
Boise, Ida.	18.5	5	23.5	26.5	19
Twin Falls, Ida.	18.5	5	23.5	27.5	19
Albuquerque, N. M.	16	5	21	24	17

S. O. CALIFORNIA

			*Plant		
Phoenix, Ariz.	14	4	18	22	20
Los Angeles, Cal.	18.5	3	21.5	24.5	15.5
Fresno, Cal.	19	3	22	25	17
San Francisco, Cal.	19	3	22	25	15.5
Reno, Nev.	23	4	27	30	19
Portland, Ore.	19.5	4	23.5	26.5	16.5
Seattle, Wash.	19.5	3	22.5	25.5	16.5
Spokane, Wash.	23.5	3	26.5	29.5	20.5
Tacoma, Wash.	19.5	3	22.5	25.5	16.5

Note: 6c per gal. discount to dealers off t.w. price of gasoline to customers taking tank truck delivery, thru S. O. California territory except 1c discount at Phoenix to dealers only.

*Prices in the fourth column represent retail sale prices of gasoline for delivery into fuel tanks of customers' automotive equipment at S. O. California refineries, terminals and district depots as this company operates no retail service stations.

S. O. LOUISIANA

Little Rock, Ark.	13	5	18	19	13
Alexandria, La.	13	4	17	17	†14
Baton Rouge, La.	12	4	16	17	†14
Lake Charles, La.	11	*5	16	16	†14
New Orleans, La.	11	*5	16	16	†12
Shreveport, La.	12	4	16	18	†14
Lafayette, La.	13	*5	18	20	†14
Bristol, Tenn.	15	5	20	22	14
Chattanooga, Tenn.	15	5	20	22	13
Knoxville, Tenn.	15	5	20	22	16
Nashville, Tenn.	14	5	19	21	16
Memphis, Tenn.	13	5	18	20	12.5

Note: 2c per gallon discount off t.w. price of gasoline to dealers thru S. O. Louisiana territory.

*Lake Charles, New Orleans and Lafayette gasoline tax includes 4c state tax and 1c parish tax. New Orleans kerosene price includes 1c parish tax in addition to 1c state tax.

†Kerosene price in Louisiana includes 1c state tax.

S. O. KENTUCKY

Ashland, Ky.	15	5	20	21	15
Catlettsburg, Ky.	15	5	20	21	15
Lexington, Ky.	14	5	19	20	14.5
Louisville, Ky.	15	5	20	22	13
Covington, Ky.	15	5	20	21	14.5
Clarksdale, Miss.	14	5	19	21	12.5
Gulfport, Miss.††	16.5	5	21.5	23.5	13
Jackson, Miss.	15	5	20	22	13
Natchez, Miss.	14.5	5	19.5	21.5	13
Vicksburg, Miss.	14.5	5	19.5	21.5	13
Birmingham, Ala.‡‡	17	4	21	23	14.5
Mobile, Ala.‡	14	4	18	18	13.5
Montgomery, Ala.*	17	4	21	23	15
Atlanta, Ga.	15	6	21	23	†15.5
Augusta, Ga.	14	6	20	22	†15.5
Macon, Ga.	14	6	20	22	†14
Savannah, Ga.	13	6	19	21	†14
Jacksonville, Fla.	15	6	21	23	14
Miami, Fla.	16	6	22	24	14
Tampa, Fla.	15	6	21	23	13
Pensacola, Fla.**	13	6	19	21	13.5

Note: Net price of gasoline to dealers is 2c under posted t.w. price thru S. O. Kentucky territory.

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

‡Mobile gasoline prices include 1c city tax.

‡‡Birmingham gasoline prices include 1c city tax.

S. O. NEBRASKA

Omaha, Neb.	15.25	4	19.25	21.25	13.25
McCook	16.75	4	20.75	22.75	14.75
Norfolk	15.75	4	19.75	21.75	13.75
North Platte	16.75	4	20.75	22.75	14.50
Scottsbluff	16.75	4	20.75	22.75	14.25

S. O. INDIANA

Chicago, Ill.	15	3	18	19	13
Decatur, Ill.	15.2	3	18.2	19.2	13.1
E. St. Louis, Ill.	14.4	3	17.4	18.4	12.2
Joliet, Ill.	15.4	3	18.4	19.4	13.3
Peoria, Ill.	15.2	3	18.2	19.2	13.1
Quincy, Ill.	15.2	3	18.2	19.2	12.9
Indianapolis, Ind.	15.2	4	19.2	20.2	14.2
Evansville, Ind.	15	4	19	20	14
South Bend, Ind.	15.4	4	19.4	20.4	14.4
Detroit, Mich.	15.8	3	18.8	19.8	14.7
Grand Rapids, Mich.	15.7	3	18.7	19.7	14.6
Saginaw, Mich.	15.9	3	18.9	19.9	14.8
Green Bay, Wisc.	15.6	2	17.6	18.6	13.4
Madison, Wisc.	15.3	2	17.3	18.3	13.1
Milwaukee, Wisc.	15.1	2	17.1	18.1	12.9
La Cross, Wisc.	16.2	2	18.2	19.2	14
Minneapolis, Minn.	16.2	3	19.2	20.2	13.9
Duluth, Minn.	16.5	3	19.5	20.5	13.9
Mankato, Minn.	16.1	3	19.1	20.1	13.7
Des Moines, Ia.	15.5	3	18.5	19.5	13.3
Davenport, Ia.	15.5	3	18.5	19.5	13.3
Sioux City, Ia.	15.1	3	18.1	19.1	12.9
Mason City, Ia.	15.5	3	18.5	19.5	13.3
St. Louis, Mo.	*14.9	2	16.9	17.9	12.3
Kansas City, Mo.	†15.9	2	17.9	18.9	11.6
St. Joseph, Mo.	†15.5	2	17.5	18.5	12.2
Fargo, N. D.	17.9	3	20.9	21.9	15.9
Grand Forks, N. D.	18.2	3	21.2	22.2	16.2
Minot, N. D.	17.9	3	20.9	21.9	15.9
Pierre, S. D.	16	4	20	21	14.4
Huron, S. D.	16.3	4	20.3	21.3	14.7
Wichita, Kans.	13.8	3	16.8	14.8	11.8
Bartlesville, Okla.	13.5	4	17.5	18.5	11.5

S. O. Indiana's quantity contract price schedule thru territory (except in Chicago and Detroit, which see below) on tank truck deliveries of gasoline, figured from the service station price is 2c for 500 gals. or more a month; 2½c for 2,000 gals. or more a month; 3c for 6,000 gals. or more a month; and 4½c for 100,000 gals. or more a month.

In Chicago and vicinity, these discounts apply: Over 500 gals. per month, 2c per gal. off service station price; over 1,000 gals. per month, 4c per gal. off service station price; over 50,000 gals. per month, 4½c per gal. off s.s. price; over 75,000 gals., 5c off.

In Detroit, dealers and consumers signing contract for all gasoline for one year, get 4c per gal. off s.s. price. Non-contracted accounts get 3c off s.s. price. Those buying 100,000 gals. or more a month, 4½c per gal. off s.s. price.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. OHIO

Ohio state-wide	15	4	19	20	13
Columbiana, †Darke, Hancock, Jackson, Licking, Muskingum, Perry, Preble and Scioto Counties	14	4	18	18	†13
Athens County	12	4	†6	16	13
Franklin	13	4	17	17	13

Note: Discount to dealers and commercial accounts generally thru Ohio is 2c per gal. off t.w. price with some exceptions. In counties where prices are below normal, discount is 3c per gal. off t.w. price.

†Kerosene t.w. price in Darke County is 11c; in Paulding County 12c.

MAGNOLIA PETROLEUM

Muskogee, Okla.	12	4	16	19	10
Oklahoma City	12	4	16	19	10
Tulsa, Okla.	12	4	16	20	10
Fort Smith, Ark.†	10	†4	14	15	12
Little Rock, Ark.	13	5	18	19	13
Texarkana, Ark.*	12	4	16	16	12
Dallas, Tex.	12	4	16	20	12
Fort Worth, Tex.	12	4	16	19	12
Houston, Tex.	11	4	15	19	11
San Antonio, Tex.	11	4	15	19	11
El Paso, Tex.	12	4	16	20	13

*Within city of Texarkana, the state tax on gasoline is 4c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 4c applies. In this district outside of the city, the 5c Arkansas tax applies.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

Greater New York City: Boroughs of Manhattan, Bronx, Queens & Kings	14.3	2	16.3	18.3	11.3
Borough of Richmond	14.7	2	16.7	18.7	11.7
Albany, N. Y.	15.6	2	17.6	19.6	12.6
Buffalo, N. Y.	14.8	2	16.8	18.8	11.8
Rochester, N. Y.	15	2	17	19	12
Syracuse, N. Y.	15.8	2	17.8	19.8	12.8
Boston, Mass.	14.5	2	16.5	18.5	11.5
Augusta, Me.	15.8	4	19.8	21.8	12.8
Manchester, N. H.	15.4	4	19.4	21.4	12.4

Latest Changes in Tank Wagon Prices

Gasoline

S. O. New York—T.w. and s.s. up 1c thru territory, **Apr. 29.**

T.w. and s.s. up 1c, Buffalo and Rochester, and up 2c, Syracuse, **Apr. 30.**

Atlantic Refining—T.w. and s.s. up 1c thru Massachusetts, Rhode Island and Connecticut, **Apr. 30,** to meet S. O. New York's advance of **Apr. 29.**

T.w. and s.s. up 1c, Brunswick and Jacksonville, both to 21c and 23c, including 6c tax, **Apr. 22.**

S. S. was cut 1c at Fall River to 17.1c, t.w. remaining unchanged at 16.1c.

S. O. Louisiana—S.s. only up 1c, Shreveport, to 18c, **Apr. 29.**

Magnolia Petroleum—T.w. cut 1c, s.s. 2c, Fort Smith, to 14c and 15c, **Apr. 24.**

T.w. and s.s. up 2c, Texarkana, both to 16c, Apr. 28.

S. O. Kentucky—Correction: S.s. prices gasoline at Jacksonville and Miami, Fla., were incorrectly published on page 132 of the April 30 issue of NATIONAL PETROLEUM NEWS. On April 22 these prices were advanced 1 cent, to 23c and 24c respectively.

S. O. Ohio—T.w. cut 1c, s.s. 2c, Jackson and Perry counties, both to 18c, **May 3.**

T.w. cut 1c, s.s. 2c, thru Greene, Gustavus, Kinsman, Vernon and Hartford townships, all in Trumbull county and also Ashtabula county, to 18c for both **May 6.** These changes are not included in the table, due to prices in the table being those in effect Monday, May 5.

T.w. cut 2c, s.s. 3c, Franklin county excepting Columbus west of the river, both to 17c, **May 3.**

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Florida, 1/8c on both; Illinois, 3/100c on both; Indiana, 4/25c to 1/2c on both; Kansas, 3/50c on both; Louisiana, 1/32c on gasoline; Minnesota, 3/50c on both; Missouri, 3/10c to 1/2c on both; Nebraska, 3/100c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c to 4/5c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only, per gallon; Iowa 7/100c; Michigan 1/5c to 4/5c per gal.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

Prices in Effect May 5, 1930

S. O. NEW YORK

	Gasoline Total T.W.	Tax	Gasoline T.W.	S.S.	Oil T.W.
Burlington, Vt.	16.3	4	20.3	22.3	13.3
New Haven, Conn.	15.6	2	17.6	19.6	12.6
Providence, R. I.	14.7	2	16.7	18.7	11.7

Note: S. O. New York allows 3c off t.w. price to dealers in New York City, and 2c off t.w. price thru rest of territory.

ATLANTIC REFINING

Pittsburgh, Pa.	15	*	15	21	13
Philadelphia, Pa.	15	*	15	21	13
Allentown, Pa.	15	*	15	21	13
Erie, Pa.	15	*	15	21	13
Scranton, Pa.	15	*	15	21	13
Altoona, Pa.	15	*	15	21	13
Dover, Del.	15	3	18	20	13
Wilmington, Del.	15	3	18	20	13
Boston, Mass.	14.5	2	16.5	18.5	11.5
Springfield, Mass.	15.5	2	17.5	19.5	12.5
Worcester, Mass.	15.3	2	17.3	19.3	12.3
Fall River, Mass.	14.1	2	16.1	17.1	12.1
Providence, R. I.	14.7	2	16.7	18.7	11.7
Hartford, Conn.	15.5	2	17.5	19.5	12.5
New Haven, Conn.	15.6	2	17.6	19.6	12.6
Atlantic City, N. J.	14.5	2	16.5	18.5	13.5
Camden, N. J.	13.6	2	15.6	17.6	12.6
Trenton, N. J.	14	2	16	18	13
Annapolis, Md.	14	4	18	20	13
Baltimore, Md.	13.2	4	17.2	19.2	10.5
Hagerstown, Md.	14.7	4	18.7	20.7	13.7
Richmond, Va.	13.7	5	18.7	20.7	12.7
Wilmington, N. C.	13.4	5	18.4	20.4	12.4
Brunswick, Ga.	15	6	21	23	**15
Jacksonville, Fla.	15	6	21	23	14

Note: 2c per gal. discount off t.w. price of gasoline on sales to dealers; discount to commercial accounts under contract for one year in accordance with Code of Ethics.

*4-cent state tax is collected by retail dealer and paid by him directly to state.

**Georgia kerosene prices include 1c state tax.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.7	17
Detroit	17.4	18.9	20.7
Kansas City	†15.9	†17.4	†19.2
Milwaukee	16.4	*19.9	*21.7
Minneapolis	**20.7	**22.2	**24
St. Louis	15.6	17.1	18.9
New York		16	23
Boston		19	23

*Includes 2c state tax. †Includes 1c city tax.
**Includes 3c state tax.

Petroleum Spirits (Solvent)

Tank Cars (F.o.b. refinery or seaboard terminal)	
New York harbor	11.00
Philadelphia district	11.00
Providence	11.50
Tank Wagon or Steel Barrels	
New York City	18
Syracuse	17–18
Rochester	18
Buffalo	17–18
Providence	19
Boston	19
Bridgeport	16–18
Newark	18
Philadelphia	16
Baltimore	18

Note: 2c off above t.w. prices to large buyers in some instances.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO	Gasoline Total T.W.	Tax	Gasoline T.W.	S.S.	Oil T.W.
Toronto	19.5	5	24.5	28	20.5
Ottawa	19.5	5	24.5	28	20.5
North Bay	22.5	5	27.5	33	27
Ft. William	22.5	5	27.5	31	22.5
Border Cities, including Windsor	18.5	5	23.5	27	19.5
MANITOBA					
Winnipeg	21.5	5	26.5	30	21.5
SASKATCHEWAN					
Regina	26	5	31	35	26
ALBERTA					
Edmonton	27.5	5	32.5	36	27.5
Calgary	23.5	5	28.5	32	23.5
BRITISH COLUMBIA					
Vancouver	23	5	28	32	24
QUEBEC					
Montreal	20.5	5	25.5	29	21.5
Quebec City	21.5	5	26.5	30	22.5
Three Rivers	21.5	5	26.5	30	22.5
NEW BRUNSWICK					
St. John	20	5	25	29	22
Moncton	20	5	25	29	22
NOVA SCOTIA					
Halifax	20	5	25	29	22
PRINCE EDWARD ISLAND					
Charlottetown	20	5	25	29	22

Note: In districts surrounding these points 1c additional is added to city price.

Aviation Gasoline Prices

Following are tank wagon prices of aviation gasoline in principal marketing territories and showing state and municipal taxes:

S. O. NEW JERSEY

Prices in Effect May 5, 1930

	T.W.	Tax	Total
Newark, N. J.	15.4	2	17.4
Baltimore, Md.	12.5	4	16.5
Washington, D. C.	15.5	2	17.5

*S. O. OHIO

Thru Ohio	17	4	21

*Discounts: For airport delivery only: 2,000 gals. or over per month, 1c per gal.; 6,000 gals. or over per month, 2c; 12,000 gals. and over per month, 3c.

*S. O. INDIANA

Chicago	17	3	20
Indianapolis, Ind.	17.2	4	21.2
Detroit, Mich.	17.8	3	20.8
Milwaukee, Wis.	17.1	2	19.1
Minneapolis, Minn.	18.2	3	21.2
St Louis, Mo.	16.4	2½	18.9
Kansas City, Mo.	16.9	3	19.9
Fargo, N. D.	19.9	3	22.9
Huron, S. D.	18.3	4	22.3
Wichita, Kan.	15.8	3	18.8

*In S. O. Indiana territory, buyer pays state and city taxes on aviation gasoline, and if he can get a refund from the state, he does so. St. Louis tax of 2½c includes ½c city tax and Kansas City tax includes 1c city tax.

*S. O. LOUISIANA

New Orleans, La.	16	5	21
Nashville, Tenn.	18	5	23
Memphis, Tenn.	17	5	22

*2c per gal. discount off above t.w. prices to dealers and commercial consumers.

S. O. NEBRASKA

*Omaha	18.25	4	22.25

*2c per gal. refund to resellers.

CONTINENTAL OIL CO.

*Denver, Col.	16	4	20
Cheyenne, Wyo.	19.5	4	23.5
Helena, Mont.	25.5	5	30.5
Salt Lake City, Utah	20	3.5	23.5
†Albuquerque, N. M.	19	5	24
Boise, Ida.	22	5	27

*1c per gal. discount to dealers at Denver. †2c per gal. discount to dealers at Albuquerque.

*S. O. CALIFORNIA

Phoenix, Ariz.	17	4	21
Los Angeles, Cal.	19.5	3	22.5
San Francisco, Cal.	20	3	23
Reno, Nev.	24	4	28
Portland, Ore.	19.5	4	23.5
Seattle, Wash.	19.5	3	22.5
Spokane, Wash.	23.5	3	26.5

*4c per gal. discount off t.w. price of gasoline to customers taking tank truck delivery, through S. O. California territory, except 1c discount at Phoenix.

Aviation Saves $500,000 On Tax Exemptions

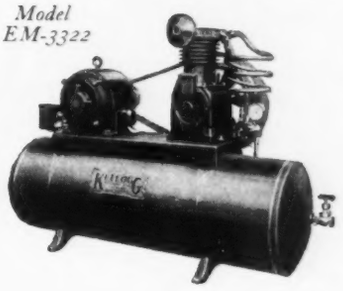
WASHINGTON, May 5.—A saving of approximately $500,000 yearly is estimated for the aviation industry by the Air Travel Division of the American Automobile Association, due to the action of 32 states and the District of Columbia in either exempting aviation fuel from taxation or refunding the state tax.

Last year the average gasoline tax was 3.22 cents per gallon for the country. Aircraft consumed 20,576,468 gallons of gasoline last year.

States which do not provide for tax exemption or refund on gasoline used for aircraft are: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, Nebraska, New Jersey, New Mexico, Oklahoma, Pennsylvania, South Carolina, Tennessee, Utah and Vermont.

KELLOGG
COMPRESSORS

Model EM-3322



A 2-Stage Compressor Specially Designed *for* Super Service Stations

4 to 24 cubic ft. of air

¾ horsepower to 5 horsepower motor

Equipped with Kellogg Pump and Splash Lubricating System

Timken bearings

Dual valves

Intercooler

Multiple V Belt Drive

Welded Steel construction

This model supplies the large volume of air at high pressure demanded by modern super service stations.

Write for complete information and prices.

KELLOGG MFG. CO.
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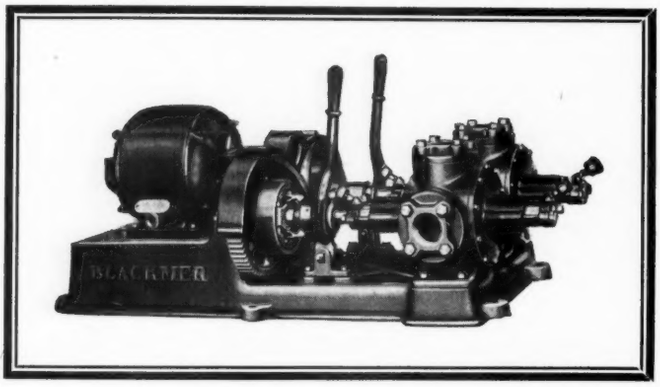
BLACKMER
Assures Long Pump Life
at your Bulk Station



Of course you expect many years of service from the pumps you purchase for bulk station use. Of course you are entitled to them! Such pumps are often subjected to terrific strains and hard usage. But even so, their span of life must not be shortened.

The Blackmer Rotary Pump is unique in that it automatically takes up its own wear. And should replacements become necessary, one man and a wrench can, in a few moments' time, rejuvenate it to almost its "brand new" state. There are Blackmer Pumps still in use which have outworn three and four motors.

The reason for the long life which distinguishes all Blackmer Pumps is due almost entirely to one simple, time-tested design. It makes the Blackmer Pump a little different—but a whole lot better. It makes possible "More Gallons Per Dollar".

If you are earnestly seeking a stricter pumping economy, you will write us today for the facts about Blackmer design and how it will save you money.

BLACKMER PUMP COMPANY

1801-B Century Ave., Grand Rapids, Michigan

BLACKMER ROTARY PUMPS

"MORE GALLONS PER DOLLAR"

Crude Oil Prices (in Effect May 5, 1930)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

(All Penna. Grade Crude Effective May 1, 1930)

†Bradford—Alleghany district.....$2.75

Bradford District Oil in New York Transit Lines (Bradford District).....††$2.50

Bradford District Oil in National Transit Lines (Bradford District).....††2.50

Penna. Grade Oil in National Transit Lines (Other Pennsylvania).....*2.55

Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)..... 2.50

Penna. Grade Oil in Eureka Pipe Lines (West Virginia)..... 2.40

Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)..... 2.20

Wayne district crude in Cumberland lines (West Virginia) (Effective Apr. 11, 1930)... 1.34

Corning Grade in Buckeye Pipe Lines (Ohio) (Effective May 2, 1930)..... 1.75

Somerset Oil in Cumberland Pipe Lines (Kentucky) (Effective Apr. 11, 1930).... 1.47

Somerset Oil in Eureka Pipe Lines (Effective Apr. 11, 1930)..... 1.31

Ragland Grade in Cumberland Pipe Lines (Kentucky) (Effective Jan. 29, 1929)....$0.60

*Oil run prior to July 1, 1929 is $2.50 per bbl.

†Posted by Tide Water Pipe Co., Ltd.

††Oil run prior to July 1, 1929 is $2.45 per bbl.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines (Effective Apr. 18, 1930).....$1.55

MICHIGAN

(Posted by Dixie Oil Co.)

Traverse and Dundee (Muskegon):

32-32.9	$1.08	39-39.9	$1.29
33-33.9	1.11	40-40.9	1.32
34-34.9	1.14	41-41.9	1.35
35-35.9	1.17	42-42.9	1.38
36-36.9	1.20	43-43.9	1.41
37-37.9	1.23	44 and above	1.44
38-38.9	1.26		

(Posted by Pure Oil Co.)

Midland, Midland County (April 29, 1930)...$1.35

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective Apr. 11, 1930

Wooster	$1.80	Princeton	$1.65
Lima	1.70	Illinois	1.65
Waterloo	1.20	Plymouth	1.23
Indiana	1.47	West Kentucky	1.55

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia.....$2.10

Oil Springs..... 2.17

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma and Kansas)

Effective Apr. 10, 1930

Below 25	$0.75	35-35.9	$1.255
25-25.9	0.80	36-36.9	1.29
26-26.9	0.85	37-37.9	1.325
27-27.9	0.90	38-38.9	1.36
28-28.9	0.95	39-39.9	1.395
29-29.9	1.00	40-40.9	1.43
30-30.9	1.05	41-41.9	1.465
31-31.9	1.10	42-42.9	1.50
32-32.9	1.15	43-43.9	1.535
33-33.9	1.185	44 and above	1.57
34-34.9	1.22		

(In North Texas: Ranger, Wichita Falls, Mexia)

Effective Apr. 10, 1930

Below 25	$0.72	30-30.9	$1.02
25-25.9	0.77	31-31.9	1.07
26-26.9	0.82	32-32.9	1.12
27-27.9	0.87	33-33.9	1.17
28-28.9	0.92	34-34.9	1.22
29-29.9	0.97	35-35.9	1.255
36-36.9	$1.29	41-41.9	$1.465
37-37.9	1.325	42-42.9	1.50
38-38.9	1.36	43-43.9	1.535
39-39.9	1.395	44 and above	1.57
40-40.9	1.43		

The Texas Co., same schedule in Oklahoma as Prairie in Oklahoma; and in North Texas, North Central Texas and Central Texas as Prairie and Humble in North Texas, effective Apr. 10.

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

Humble's prices in above fields same as Prairie's prices in North Texas, effective Apr. 10, which see.

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Below 26	$0.70	28-28.9	$0.88
26-26.9	0.76	29-29.9	0.95
27-27.9	0.82	30-30.9	1.02

Rest of Magnolia schedule up to 44 and above same as Prairie in Oklahoma and Kansas.

Apr. 10, 1930, Glasscock, Crane, Upton, Winkler, Howard and Mitchell Counties same prices as Humble's postings in Winkler, Crane, etc., which see

Corsicana heavy	$0.80
Luling	0.85
Mirando	0.85
Darst Creek, 60° F. gravity	1.15

Carter Oil Co.

(Oklahoma and Kansas)

Apr. 10, 1930, same schedule as Prairie, which see.

PANHANDLE TEXAS

Humble Oil & Refining Co.

Effective Apr. 10, 1930

Hutchinson and Carson Counties:

Below 32	$0.775	38-38.9	$1.065
32-32.9	0.825	39-39.9	1.10
33-33.9	0.875	40-40.9	1.135
34-34.9	0.925	41-41.9	1.17
35-35.9	0.96	42-42.9	1.205
36-36.9	0.995	43-43.9	1.24
37-37.9	1.03	44 and above	1.275

Gray County:

Below 29	$0.755	37-37.9	$1.16
29-29.9	0.805	38-38.9	1.195
30-30.9	0.855	39-39.9	1.23
31-31.9	0.905	40-40.9	1.265
32-32.9	0.955	41-41.9	1.30
33-33.9	1.005	42-42.9	1.335
34-34.9	1.055	43-43.9	1.37
35-35.9	1.09	44 and above	1.405
36-36.9	1.125		

Wheeler County: Posted by Magnolia Pet. Co. Humble withdrew Wheeler county postings Apr. 10.

Below 30	$0.755	37-37.9	$1.11
30-30.9	0.805	38-38.9	1.145
31-31.9	0.855	39-39.9	1.18
32-32.9	0.905	40-40.9	1.215
33-33.9	0.955	41-41.9	1.25
34-34.9	1.005	42-42.9	1.285
35-35.9	1.04	43-43.9	1.32
36-36.9	1.075	44 and above	1.355

Above prices met by The Texas Co. and Magnolia on Apr. 10.

WEST TEXAS AND NEW MEXICO

Humble Oil & Refining Co.

Effective Apr. 10, 1930

Winkler, Crane, Upton, Crockett, Ector, and Pecos Counties, also Lea County, N. Mex.

Below 25	$0.65	31-31.9	$0.86
25-25.9	0.68	32-32.9	0.89
26-26.9	0.71	33-33.9	0.92
27-27.9	0.74	34-34.9	0.95
28-28.9	0.77	35-35.9	0.98
29-29.9	0.80	36 and above	1.01
30-30.9	0.83		

Howard and Glasscock counties:

Effective Apr. 10, 1930

Below 25	$0.65	31-31.9	$0.82
25-25.9	0.68	32-32.9	0.84
26-26.9	0.71	33-33.9	0.86
27-27.9	0.74	34-34.9	0.88
28-28.9	0.76	35-35.9	0.90
29-29.9	0.78	36 and above	0.92
30-30.9	0.80		

Apr. 10, 1930, The Texas Co. posted same prices in Crane, Upton, Winkler and Lea counties as Humble.

SOUTH AND SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)

Effective Apr. 10, 1930

Mirando	$0.85
Salt Flat	1.15
Darst Creek	1.15
Pettus, Bee County	1.40

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto, and Sabine.

Effective Apr. 11, 1930

Below 28	$0.87	36-36.9	$1.29
28-28.9	0.92	37-37.9	1.325
29-29.9	0.97	38-38.9	1.36
30-30.9	1.02	39-39.9	1.395
31-31.9	1.07	40-40.9	1.43
32-32.9	1.12	41-41.9	1.465
33-33.9	1.17	42-42.9	1.50
34-34.9	1.22	43-43.9	1.535
35-35.9	1.255	44 and above	1.57

Cotton Valley, Sarepta and Carterville below 36 $0.85. Rest of schedule same as Caddo, Homer, etc.

Smackover, below 24	$0.90
do 24 and above	1.05
Bellevue (Apr. 11, 1930)	1.15
*Urania, La. (Apr. 11, 1930)	0.95
†East El Dorado (Calion) (Apr. 11, 1930)	0.90

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

Apr. 10, 1930, The Texas Co. same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.67; 25-25.9, $0.72; 26-26.9, $0.77; 27-27.9, $0.82.

Apr. 11, Magnolia met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Lousiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective Apr. 11, 1930

Below 28	$0.76	30-30.9	$0.91
28-28.9	0.81	31-31.9	0.96
29-29.9	0.86	32 and above	1.01

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective Apr 10, 1930

Grades A	$1.15	34-34.9	$1.30
Grades B:		35-35.9	1.33
Below 25	1.00	36-36.9	1.36
25-25.9	1.03	37-37.9	1.39
26-26.9	1.06	38-38.9	1.42
27-27.9	1.09	39-39.9	1.44
28-28.9	1.12	40-40.9	1.46
29-29.9	1.15	41-41.9	1.48
30-30.9	1.18	42-42.9	1.50
31-31.9	1.21	43-43.9	1.52
32-32.9	1.24	44 and above	1.54
33-33.9	1.27		

Refugio county (rest of schedule, same as Grades B, which see above).

Below 25	$0.85		
25-25.9	1.03		

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Humble, Pierce Junction, Sugarland and Raccoon Bend. All other fields are Grades A only.

Specifications for Grade "A" crude: Gravity: 25° and below, at 60° F; Viscosity: not less than 100 seconds at 100° F Saybolt.

Sulfur: not over .4%.

Grade "B" includes all Coastal crude which does not meet the test for "A" grades.

Crude Price Changes

OIL CITY—On May 1 Joseph Seep Purchasing Agency reduced all grades of Pennsylvania crude 25 cents per barrel. Wayne district, Corning, Somerset and Ragland crudes were unchanged.

New prices for Pennsylvania grade crude are: Bradford district oil in New York and National Transit lines, $2.50; other Pennsylvania crude in National Transit $2.55; other Pennsylvania in Southwest Pennsylvania Pipe Line lines, $2.50; in Eureka lines (West Virginia), $2.40; Macksburg district in Buckeye lines, $2.20 per barrel. Last previous change was a 25 cent cut on Feb. 17.

OIL CITY—On May 2 Joseph Seep Purchasing Agency advanced Corning, O. crude in Buckeye lines 10 cents, making new price $1.75 per barrel. Last previous change was a 15 cent cut on Feb. 17. The Seep Agency also discontinued postings on Corning heavy crude.

BRADFORD—On May 1 Tide Water Pipe Co., Ltd., reduced prices for Bradford-Alleghany district crude 25 cents, making its new price $2.75 per barrel at wells for this grade of Pennsylvania crude.

PITTSBURGH—On April 29 Pure Oil Co. advanced prices for Midland district crude, Midland county, Mich., 10 cents, making new price $1.35 per barrel at wells.

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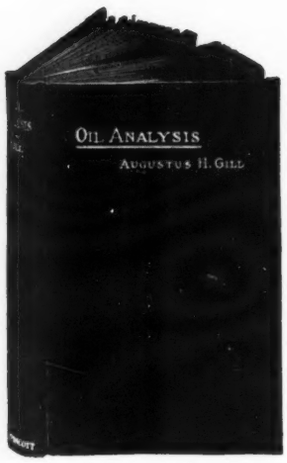

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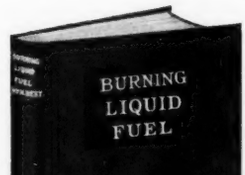

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Crude Oil Prices (in Effect May 5, 1930)

(Prices are per barrel at the well)

(Crude Oil Prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective Apr. 10, 1930

Grades A.....$1.15 *Grades B.....$1.00

*Grades B include all heavy crudes which do not meet tests for Grades A or for Grades B light crude. Prices for Grades B light crude are the same as Humble's, which see.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Apr. 10, 1930)

‡Salt Creek 29–29.9	$1.00
" " 30–30.9	1.05
" " 31–31.9	1.10
" " 32–32.9	1.15
" " 33–33.9	1.185
" " 34–34.9	1.22
" " 35–35.9	1.255
" " 36–36.9	1.29
" " 37 and above	1.325
Elk Basin	1.55
Grass Creek light	$1.55
Big Muddy	1.38
Lance Creek	1.63
Rock Creek	1.35
Mule Creek	1.20
Rex Lake	1.10
‡Osage	1.63
‡Cat Creek, Mont	1.55
Sunburst, Mont	1.65
‡Hogback, N. Mex	1.40
Artesia, N. Mex	1.05

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

Standard Oil Co. of California

(Effective March 11, 1930)

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach Inglewood* Olinda-Brea Canon*	Athens Rosecrans Dominguez	Elwood Terrace	Torrance Richfield	Whittier La Habra	Montebello	Coyote	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elk Hills Buena Vista Hills Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Orcutt (Santa Maria) (Union Oil Co.)	Santa Paula (Ventura) (Union Oil Co.)	Ventura Avenue (Associated Oil Co.)
14–14.9**	$0.70	....	....	$0.70	$0.70	$0.70	$0.70	....	$0.55	$0.55	$0.55	$0.55	....	$0.55	$0.70	$0.70
15–15.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	....	.55	.70	.70
16–16.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	$1.65	.55	.70	.70
17–17.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	for	.55	.70	.70
18–18.9	.76	....		.76	.76	.71	.76	....	.55	.62	.62	.62	55*	.65	.75	.76
19–19.9	.82	....		.82	.82	.77	.82	....	.55	.70	.70	.70	gravity	.70	.80	.82
20–20.9	.88	....		.88	.87	.83	.87	....	....	.78	.78	.78	and	.78	.85	.88
21–21.9	.94	....		.94	.93	.90	.93	.92	....	.86	.86	.86	over	.90	.90	.91
22–22.9	1.00	....	....	1.00	.98	.97	.98	.95	....	.94	.94	.94	....	.95	.97	.94
23–23.9	1.07	....	....	1.07	....	1.05	1.04	1.01	....	1.02	1.02	1.02	....	1.02	1.05	1.00
24–24.9	1.14	1.14	....	1.14	....	1.11	1.10	1.07	....	1.09	1.07	1.07	....	1.10	1.08	1.07
25–25.9	1.21	1.19	....	1.21	....	1.17	1.16	1.13	....	1.16	1.12	1.12	....	1.18	1.13	1.14
26–26.9	1.28	1.24	....	1.28	....	1.23	1.23	1.19	....	1.23	1.17	1.17	....	1.26	1.18	1.21
27–27.9	1.35	1.29	....	1.35	....	1.29	1.30	1.25	....	1.30	1.23	1.22	....	....	1.23	1.28
28–28.9	1.42	1.34	....	1.42	....	1.35	1.37	1.31	....	1.35	1.27	....	....	....	1.28	1.35
29–29.9	1.46	1.39	....	†1.46	....	1.38	1.41	1.37	....	1.41	1.31	....	....	....	1.33	1.39
30–30.9	1.50	1.45	....	†1.50	....	1.41	1.45	1.43	....	1.47	1.35	....	....	....	1.39	1.43
31–31.9	1.55	1.51	....	....	....	....	....	1.49	....	1.53	1.39	....	....	....	1.45	1.48
32–32.9	1.60	1.57	....	....	....	....	....	1.55	....	1.59	1.43	....	....	....	1.51	1.53
33–33.9	....	1.64	....	....	....	....	....	1.60	....	1.65	1.47	....	....	....	1.58	1.59
34–34.9	....	1.71	1.32	....	....	....	....	1.65	....	††1.71	1.51	....	....	....	....	1.65
35–35.9	....	1.78	1.39	....	....	....	....	1.70	....	††1.77	1.55	....	....	....	....	1.71
36–36.9	....	1.84	1.46	....	....	....	....	1.75	....	....	....	....	....	....	....	....
37–37.9	....	1.90	1.53	....	....	....	....	1.80	....	....	....	....	....	....	....	....
38–38.9	....	1.96	1.60	....	....	....	....	1.85	....	....	....	....	....	....	....	....
39–39.9	....	2.02	1.66	....	....	....	....	1.90	....	....	....	....	....	....	....	....
40–40.9	....	2.08	1.72	....	....	....	....	....	....	....	....	....	....	....	....	....
41–41.9	....	2.14	1.78	....	....	....	....	....	....	....	....	....	....	....	....	....
42–42.9	....	2.20	1.84	....	....	....	....	....	....	....	....	....	....	....	....	....

*Inglewood prices run only to 28.9 gravity; Olinda-Brea Canon to 31.9 gravity.
†Richfield crude only. ††These two grades apply on Lost Hills only.
**Standard does not contract for crude testing below 14 gravity, but pays 45c per barrel when purchased

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	May 5	Apr. 28
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.55	$1.55
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums cwt.	$0.80	$0.80
Sal Soda wks.	$1.00–1.05	$1.00–1.05
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of, cwt.	$3.10–4.00	$3.10–4.00
Liquid Chlorine, tank cars, wks., lb.	3.50–5.00	3.50–5.00

Compounders' Supplies

	May 5	Apr. 28
Vegetable Oils		
Linseed carloads, spot, lb.	14.20	14.20
Tanks, spot	13.40	13.40
Soya Bean, Tank, coast, lb.	9.50	9 50
Oleic Acid		
Distilled, tanks, lb.	9.25–9.50	9.25–9 50
Distilled, bbls., lb.	10.125-10.375	10.125-10.375
Saponified, tanks, lb.	9.25	9.25
Saponified, bbls., lb.	10.125–10.625	10.125-10.625
Lard Oils		
Prime Winter Strained, lb.	13.25	13.25
Extra Winter Strained, lb.	11.75	11.75
Extra, lb.	11.50	11.50
Extra No. 1, lb.	11.00	11.00
No. 1, lb.	10.50	10.50
No. 2, lb.	10.25	10.25
Tallow oil, lb.	10.00	10.00
Neatsfoot Oil		
Pure, bbls., lb.	13.00	13.00
Extra, bbls., lb.	11.25	11.25
No. 1 bbls., lb.	11.00	11.00
Cold Pressed, lb.	17.50	17.50
Fish Oils		
Menhaden Oil		
Light Pressed, gal.	63–65	63–65
Light Pressed, tank cars, N. Y., gal.	53	53
White bleached, gal.	67	67
Yellow bleached, gal.	61	61
Whale, extra winter bleached, gal.	85	85
Naval Stores		
Steam, distilled turpentine, N. Y., gal.	46	47
Steam distilled turpentine, Savannah, gal.	43	53
Gum turpentine, N. Y., gal.	52	52
Gum turpentine, f.o.b. cars Savannah, gal.	46	46–48
Wood Rosin, N.Y., gal.	$6.60	$6.80
Wood Rosin F, Savn'h, bbl.	$5.80	$5.80
Gum Rosin B, N. Y., bbl.	$6.60	$6.80
Gum Rosin B, f.o.b. cars Savannah, bbl.	$5.90	$5.90
Rosin oil, pure, gal.	58	58
Rosin oil, compounded, gal.	53	58
Pine Tar		
Kiln burnt, bbl.	$13.00–14.00	$13.00–14 00
Retort, bbl.	$13.50–14.50	$13.50–14 50
Alcohol		
Denatured Formula 5, in bbls., per gal.	50–54	51–55

OIL STOCKS AND FINANCES

National Petroleum News

Little or No Improvement Shown In Earnings This Year

First Quarter Reports

Company	1930	1929
American Republics	$194,875	*$83,788
Barnsdall Corp.	1,420,595	1,888,372
Colonial Beacon Oil	*856,861	140,477
Continental Oil	523,302	.....
Independent Oil & Gas	743,195	2,018,850
Lion Oil Refining	1,714	*15,819
Panhandle Prod. & Refg.	37,225	32,919
Simms Petroleum	*37,554	$57,351
Tide Water Associated	2,165,387	1,613,671
Tide Water Oil	651,165	861,299
Transcontinental Oil	†1,173,869	†527,551

*Loss. †Before federal income tax.

CLEVELAND, May 5

WITH two exceptions the reports of 10 oil companies on earnings in the first quarter of 1930 show little or no improvement over 1929 earnings. Reports of four of the 10 companies show a decline in income.

The two exceptions are the Tide Water Associated Oil Co. and the Transcontinental Oil Co.

Tide Water Associated's improvement came through the income of the Associated Oil Co., its report indicates, as Tide Water Oil Co.'s net was $200,000 less than its net a year before.

Transcontinental before deduction of federal income tax reported an increase of more than 100 per cent.

Continental Oil Co. of Delaware, the consolidation of the Continental Oil Co. of Maine and Marland Oil Co., reported net earnings of $523,302 for the quarter. Comparative figures of a year ago are not available because then the component companies were independent of one another.

American Republic Corp., which includes some oil equipment and transportation subsidiaries as well as oil companies, more than doubled its loss this year as compared with last.

Barnsdall Corp.'s net earnings fell more than $450,000, and Colonial Beacon Oil Co., subsidiary of Standard Oil Co., N. J., failed by almost $1,000,000 to equal last year's first quarter net of $140,477.

Independent Oil & Gas Co.'s net the first quarter was only approximately 35 per cent of its first quarter profits in 1929.

Lion Oil Refining Co. turned a loss last year into a small net profit this year. Panhandle Producing & Refining Co. stepped up its net income a little. Income of Simms Petroleum Co. slumped about $95,000.

Annual Reports

Company	1929	1928
Cities Service	†$34,229,570	†$27,606,323
Imperial Oil	26,350,309	22,963,264
Penn Mex Fuel	283,510	1,965,701
Shaffer Oil & Refg.	†3,193,989	†3,104,122
Shell Union Oil	17,573,249	20,395,021
S. O. New York	38,750,849	39,645,228
Warner Quinlan	1,722,955	1,413,735

†Before reserves.

CLEVELAND, May 3

IMPROVEMENT of earnings in 1929 over 1928 profits has just been reported by Imperial Oil, Ltd., Canadian subsidiary of Standard Oil Co., N. J. Contraction in net income was reported by Standard Oil Co. of New York and Shell Union Oil Corp., the latter the holding company for Royal Dutch-Shell operations in the United States.

The Standard of New York's income slumped less than $1,000,000 from the 1928 income but Shell Union's profits receded more than $2,800,000.

Warner Quinlan Co.'s net increased more than 20 per cent last year. Penn Mex Fuel Co., subsidiary of South Penn Oil Co., reported slump of almost $1,700,000.

Cities Service Co. income before reserves rose more than $6,600,000 to $34,229,570, but this sum contains the earnings of the company's public utility subsidiaries as well as its oil companies.

Shaffer Oil & Refining Co. reported an increase of almost $90,000 before reserves for depreciation and depletion.

Earnings per share of common stock after all charges were as follows:

Imperial Oil—99 cents a share in 1929 and 87 cents in 1929 on 26,490,741 no par shares.

Penn Mex Fuel Co.—71 cents per $25 share in 1929 and $4.91 in 1928; 400,000 shares outstanding both years.

Shell Union Oil Corp.—$1.26 a share in 1929 on 13,068,497 no par shares outstanding at the end of 1929 and $2.04 a share on 10,000,000 shares outstanding in 1928.

Standard Oil Co. of New York—$2.23 a share in 1929 on 17,379,572 $25 shares and $2.28 a share in 1928 on 17,363,783 shares.

Warner-Quinlan Co.—$2.96 a share on the average 581,939 no par shares outstanding in 1929 as compared with $3.86 a share on 339,752 shares average in 1928.

Skelly to Issue Preferred

TULSA, May 3.—Stockholders of Skelly Oil Co. at a special meeting May 14 will vote on a proposal to increase the number of shares of capital stock 120,000 shares to 1,520,000 shares, the additional stock to be $100 par 6 per cent preferred. It is said the preferred has already been oversubscribed. The new stock will bring $12,000,000 to the Skelly company.

Galena Stock Being Exchanged

NEW YORK, May 3.—Stocks in the new Galena Oil Corp. is being distributed by the Equitable Trust Co. of New York in exchange for stock of the old Galena-Signal Oil Co. Two shares of Galena Oil Corp. common stock and $75 are being given for preferred stock of either class in the old company and common stock is being exchanged share for share. No fractional shares are being issued in the new company and fractional shares of the old company are being bought on a basis of $7 per share.

Houston to Split Stock; Bonds Are Issued

NEW YORK, May 3.—Houston Oil Co. directors have voted to split the common and preferred stock into $25 par value shares and issue four new shares for each outstanding $100 par value share.

The company has issued $12,000,000 10-year secured 5½ per cent sinking fund gold bonds, Series A, of an authorized issue of $25,000,000. The price was 97 and accrued interest to yield 5.90 per cent.

Proceeds from the bonds will be used to redeem $6,950,000 5½ per cent notes due in 1938, to extend pipe line facilities, develop production in southwestern Texas fields, and for other corporate needs.

The company has outstanding $8,947,600 par value of 6 per cent cumulative preferred stock and $24,968,600 par value common stock. A dividend of 10 per cent in stock on the common stock has been declared subject to approval by stockholders of an increase in the authorized common.

WHY an All-bolted FRAME?

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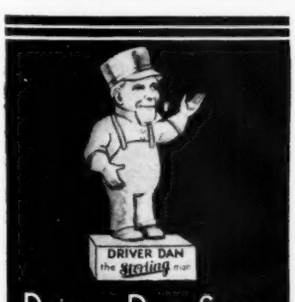
For pamphlet, "Why a Wood-Lined Frame?" write to Driver Dan in care of Sterling Motor Truck Company, Milwaukee, Wisconsin.



Driver Dan Says: «Cushioning the road shocks means comfort in the cab . . . as well as saving the truck and its motor.»

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Newark	Sacramento
Trenton	San Bernardino
Baltimore	San Diego
Erie	San Francisco
Philadelphia	San Jose
Pittsburgh	Stockton
Reading	Klamath Falls
Akron	Portland
	Seattle
	Spokane

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Transactions in Oil Shares on New York Stock Exchange

1928 High	1928 Low	1929 High	1929 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended May 3 Sales	First	High	Low	Last	Change
43¾	27⅛	42⅝	17½	(sh) 992,075	N.P.	Amerada Corp.	50cQ	Jan. 31, 30	23,900	27¾	28½	24⅝	24⅝	— 2⅞
85	51¼	64¾	12½	(sh) 209,180	N.P.	American Republics Corp.	....	.....	4,900	32¾	32¾	21½	21⅛	—11⅝
53⅜	37½	47¼	32½	$56,000,000	$25	Associated Oil	50cQ	Dec. 31, 29	120	48½	48½	48	48½	0
62½	50	77⅛	30	50,000,000	25	Atlantic Refining	‡25cQ	Mar. 15, 30	56,000	45⅞	46¾	40	40	— 5⅞
53	20	49⅛	20	47,261,125	25	Barnsdall Corp. A	50cQ	Feb. 7, 30	57,000	30⅞	30⅞	25	25⅛	— 4
51⅛	20	49	38⅛	300,525	25	do B	50cQ	Feb. 7, 30	.....	.....	.....	.....	.....	.....
24½	12¼	32⅞	13	(sh) 956,075	N.P.	Beacon Oil	....	.....	3,900	20⅛	20⅜	17½	17½	— 1⅝
36	25¼	34½	25	$51,524,150	$25	California Petroleum	....	Jan. 1, 29	10	28	28	28	28	0
.....	.....	37¾	18	(sh) 4,634,163	N.P.	Continental Oil (Delaware)	....	.....	89,300	30	36⅛	24⅝	25	— 4⅛
94⅛	68	94¾	42¼	21,031,400	100	General Asphalt	$1Q	Mar. 15, 30	24,800	63½	64¼	53⅜	54	— 9⅛
141	110½	138	103½	6,628,200	100	do pfd	$1.25Q	Dec. 2, 29	.....	.....	.....	.....	.....	.....
67	79	109⅜	23	25,000,000	100	Houston Oil	....	.....	89,400	113½	114⅜	89	89	—24
38⅛	21¾	39¼	17¾	(sh) 1,333,157	N.P.	Independent Oil & Gas	50cQ	Jan. 31, 30	22,700	29	28¼	24	24	— 4
39⅝	9	53	13	$4,299,190	$10	Indian Refining	....	Dec. 15, 20	69,700	22¼	23	16	16	— 6¾
37¼	8½	51¼	11½	4,550,110	10	do ctfs.	....	.....	23,700	21	21⅞	15½	15½	— 5⅜
185	140	165	160	1,977,700	100	do pfd. new	$1.75Q	Jan. 1, 30	.....	.....	.....	.....	.....	.....
39½	27⅛	38⅝	16½	3,992,387	N.P.	Lago Oil & Transport	....	May 2, 27	4,400	24½	25	24	24	— 1
119¾	9⅜	18	7	(sh) 1,187,298	N.P.	Louisiana Oil Refining	....	.....	6,200	11⅜	12	9⅜	10¼	— ⅜
96	78	100¼	80	$4,000,000	$100	do pfd	$1.62½	Feb. 15, 30	.....	.....	.....	.....	.....	.....
25½	12¼	18½	5⅜	(sh) 330,000	N.P.	Maracaibo Oil	....	.....	2,100	9	9	6¼	6¼	— 3
360	250	295	176	$45,942,800	$100	Mexican Petroleum	$3Q	Jan. 20, 30	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	12,000,000	100	do pfd	$2Q	Jan. 20, 30	.....	.....	.....	.....	.....	.....
73	4⅜	69¾	9¼	(sh) 995,500	N.P.	Mexican Seaboard	....	Nov. 15, 24	151,200	35¼	35½	22	22	—12⅞
44½	25⅛	39⅞	22⅛	(sh) 1,857,461	N.P.	Mid-Continent	50cQ	Feb. 15, 30	31,100	32	32½	28⅞	28⅞	— 3⅛
120½	103¼	121	120¼	$6,718,000	$100	do pfd	$1.75Q	Dec. 1, 29	.....	.....	.....	.....	.....	.....
7⅜	2⅜	5⅜	¾	23,849,720	10	Middle States	....	July 1, 23	.....	.....	.....	.....	.....	.....
5⅛	1½	3⅜	⅞	5,950,500	10	do ctfs	....	.....	7,100	2	2	1⅝	1⅝	— ¼
2¼	1	1½	⅝	(sh) 3,500,000	N.P.	Pacific Oil	....	.....	1,300	1⅛	1⅛	1⅛	1⅛	0
55½	38¼	69	40¼	$50,000,000	$50	Pan American P. & T.	....	Oct. 20, 27	1,900	59	60	56	56	— 2
58⅞	37⅜	69¼	40½	121,101,400	50	do B	....	Oct. 20, 27	27,400	60¼	63¾	56	58¼	— 1¼
28⅜	15½	17½	13½	(sh) 400,000	N.P.	Pan. American Western B	....	Jan. 30, 27	.....	.....	.....	.....	.....	.....
21⅜	11¾	15¾	3	199,370	N.P.	Panhandle P. & R.	....	.....	13,200	11	11½	8⅝	9½	— ⅝
106¾	70	76	47½	$2,935,200	$100	do pfd	....	July 2, 23	600	60	62	60	62	+ 5
53⅞	35¼	47	24¼	(sh) 2,406,803	N.P.	Phillips Petroleum	50cQ	Apr. 1, 30	346,200	41½	44¾	38⅛	40	— 1½
5¼	⅜	3¼	1	$29,622,925	$25	Pierce Oil Corp.	....	.....	21,000	2¼	2½	2	2	— ¼
50	16¼	51½	20	15,000,000	100	do pfd.	....	Feb. 1, 22	13,500	46	52	45⅛	45⅛	+ ⅛
6⅝	3½	5⅞	⅛	(sh) 2,500,000	N.P.	Pierce Petroleum	....	.....	90,900	6¾	7	5⅛	5½	0
64⅝	59½	65⅝	40½	$60,636,450	$25	Prairie Oil & Gas	50cQ	Mar. 31, 30	31,000	50	50	46½	46⅝	— 2⅞
.....	.....	65	45	101,250,000	25	Prairie Pipe Line	‡75cQ	Mar. 31, 30	3,800	54¾	55¼	53½	53⅛	— 1⅜
29½	16	25⅞	4	37,450,850	50	Producers & Refiners	....	Sept. 15, 23	1,200	10⅛	10⅛	8⅛	8⅛	— 2⅛
49⅜	41	46¾	25½	2,845,350	50	do pfd.	....	May 1, 25	.....	.....	.....	.....	.....	.....
31¾	19	30¼	20	75,959,255	25	Pure Oil Co.	37½c	Mar. 1, 30	25,200	25¼	25⅜	24	24	— 1¼
119	108	116	108	13,000,000	100	do 8% pfd.	$2Q	Apr. 1, 30	90	113	113¾	112½	113	0
56	23½	49¾	20	47,127,725	25	Richfield Oil	50cQ	Feb. 15, 30	19,000	25⅞	26¼	22¾	23	— 4
.....	.....	42½	15	(sh) 1,200,000	N.P.	Rio Grande Oil Co.	50cQ	Jan. 25, 30	16,100	23	23¾	19⅞	20	— 3
64	44⅝	64	43⅛	(sh) 546,646	$13.40	Royal Dutch N. Y. shares	$1.3415	Feb. 5, 30	37,800	54¾	55⅜	52½	52⅝	— ⅞
57½	39⅜	55⅜	22⅝	(sh) 65,203,000	£2	Shell Transport & T.	97c	Jan. 28, 30	90	46	46	46	46	— 2⅜
39⅛	23¼	31⅜	19	12,254,979	N.P.	Shell Union Oil	35cQ	Mar. 31, 30	24,900	24½	24½	22⅛	22⅛	— 2⅜
27¼	18⅛	40⅛	15	$8,357,280	$10	Simms Petroleum	40cQ	Mar. 15, 30	34,300	33	35¼	28	28	— 5⅛
46¾	17⅜	45	21	5,494,095	N.P.	Sinclair Consolidated	50cQ	Jan. 15, 30	148,900	30⅛	31	25½	25¾	— 4¼
110	102½	111¾	103	$16,025,200	$100	do pfd.	$2Q	Feb. 15, 30	100	111¾	111¾	111¾	111¾	— ½
42⅝	25	46½	28	27,396,590	25	Skelly Oil Co.	50cQ	Mar. 15, 30	41,400	38⅞	39⅜	34½	34½	— 4⅝
88	53	81⅞	51½	(sh) 13,016,435	N.P.	S. O. California	62½cQ	Mar. 15, 30	33,500	74½	74¾	62⅝	68	— 6¼
59¾	37⅜	86⅜	48	$612,095,850	$25	S. O. New Jersey	‡25cQ	Mar. 15, 30	1,348,800	83½	e47⅝	72¼	73	— 9⅝
45½	28¼	48⅛	31¼	434,094,575	25	S. O. New York	40cQ	Mar. 15, 30	391,600	39¼	40⅜	34½	34⅞	— 4¼
77	31½	84¾	53	(sh) 1,297,847	N.P.	Sun Oil	‡25cQ	Mar. 15, 30	1,900	67	67⅜	65	65	— 3
110	110	105½	100	$5,000,000	$100	do pfd.	$1.50Q	Dec. 2, 29	290	104	104¼	103¾	104	0
14¼	2½	24	5¼	(sh) 1,304,698	N.P.	Superior Oil Corp.	....	Dec. 20, 20	11,700	7¾	7¾	7	7	— ¾
74¾	50	71⅛	50	$211,082,925	$25	The Texas Corp.	75cQ	Apr. 1, 30	103,600	57⅞	60½	55½	56	— 2
26¾	12¾	23⅞	9	8,380,340	10	Texas Pacific Coal & Oil	2½%e	Dec. 31, 29	10,000	12⅜	12¾	9⅞	10⅛	— 2¼
41½	19¾	40	14	(sh) 2,179,275	N.P.	Tide Water Oil Co.	20cQ	Mar. 31, 29	400	30¾	30¾	28¾	30¾	— ¼
100¾	86¾	97½	85⅛	$20,321,000	$100	do 5½% pfd.	$1.25Q	Feb. 15, 30	1,000	94	94	93	93	— 1
29	14¾	23½	10	(sh) 4,877,976	N.P.	Tide Water Associated	30cQ	Feb. 15, 30	49,600	16⅞	17⅜	15	15	— 2
91¾	81⅞	90⅞	86¼	$72,989,200	$100	do pfd.	$1.50Q	Apr. 1, 30	2,500	88	88	86⅝	87	— 1½
14½	6¼	21	5⅛	(sh) 3,842,029	N.P.	Transcontinental Oil	....	.....	149,600	22⅞	23½	19	19⅝	— 3
58	42¾	54½	41⅜	$40,858,375	$25	Union Oil of California	‡50cQ	Feb. 10, 30	5,000	47¼	47⅞	44½	44½	— 2½
128¼	110	163¾	33	31,101,200	100	Union Tank Car Co.	$1.25Q	Mar. 1, 30	800	34	35	34	34	— 1
44⅞	26	42⅞	15	(sh) 488,359	N.P.	Warner Quinlan	25cQ	Apr. 3, 30	41,600	22¾	22¾	19½	19⅝	— 3
38	20⅛	38	29	(sh) 490,000	N.P.	White Eagle Oil & Refining	50cQ	Jan. 20, 30	.....	.....	.....	.....	.....	.....
22⅜	17¼	29¾	11½	(sh) 428,967	N.P.	Wilcox Oil & Gas	....	May 10, 28	1,700	20	20	18½	18½	— 2

*New High †New Low xEx-Dividends ‡Also Extras e-Stock Total Sales 3,721,000

Cleveland Stock Market

May 2	Par Value	Bid	Asked
Canfield Oil	$100	..	135
Fred G. Clark, Inc.	10	..	8¾
National Refining	25	32½	34
do pfd.	100	132	134
Paragon Refining ctfs	..	..	12¼
do A pfd.	N.P.	..	42

NEW YORK, May 3.—The Valvoline Oil Co., for years located at 165 Broadway, has moved its offices to the Chrysler Bldg., 405 Lexington ave. The company occupies the entire 39th floor and has taken the telephone number of "Murray Hill 3355."

The Tidewater Oil Co., which recently moved into the Whitehall Bldg., at 17 Battery Place, occupies floors five, six and seven in that building. It retained its old telephone number of "Whitehall 6000."

Space for the Tidewater was made by The Texas Co.'s move to the Chrysler Bldg.

Petroleum Products, Inc. Organized

KANSAS CITY, Mo., May 3.—General offices have been opened here in the Waltower Bldg. by Petroleum Products, Inc., to do a wholesale oil marketing business.

Officers of the company are: R. A. Murray, president; Lee R. Saunders, vice president and general manager; C. C. Carlson, vice president; Dr. J. C. Thompson, secretary; and M. B. Levy, treasurer. E. L. Bride will be assistant to Mr. Saunders.

Phillips Buys Three Jobbers

CLEVELAND, April 29.—Phillips Petroleum Co. has announced the purchase of three Independent jobbing companies during the past few days. They include the Newago Oil Co. of Shawnee, Okla.; the Sloan Oil Co. of Albia, Iowa; and the Mt. Vernon Oil Co. of Mt. Vernon, Ill.

REIDSVILLE, N. C.—A service station that will have as a feature a flower garden, a small fountain and a lily pond, is being erected here by C. P. Robertson. Mr. Robertson formerly operated a service station in Leaksville which he sold to the Standard Oil Co. of New Jersey.

Pittsburgh Stock Exchange

Transactions Week Ended May 2, 1930

	Sales	High	Low	Last	Change
Ark. Nat. Gas	390	15	13⅛	13⅛	—2⅝
do pfd	315	8	8	8	0
Devonian Oil	605	14	11¾	12	—2
Leonard Oil	5,540	4½	3½	3½	— ⅜
Lone Star Gas	20,052	54	50½	51½	—2½
do pfd	110	109	108¾	108¾	—1¼
Plymouth Oil	575	24½	22	24	— ⅝
Phoenix Oil & Gas	8,300	.50	.50	.50	0
Shamrock Oil & Gas	13,050	26½	23	25	+ ½
Lone Star rights	12,465	4¾	4¼	4⅜	— ¼
Shamrock O & G 6s	$7,000	108	107	108	+1¾

Pittsburgh Curb Market

Transactions Week Ended May 2, 1930

	Sales	High	Low	Last	Change
Arkansas Gas A	1,041	15	13½	13½	—1⅞
Gulf Oil	700	164	164	164	....
Okla. Gas 6s	$1500	94	94	94	....

Financial Notes

Standard Oil Co., California—All directors re-elected at annual meeting. All officers were re-elected subsequently.

Ohio Oil Co.—Common stock has been placed on $4 annual dividend basis. Company had been paying $2 regular dividend and $2 extra.

Superior Oil Corp.—All directors re-elected at annual meeting.

Tide Water Associated Oil Co.—All retiring directors re-elected at annual meeting.

Sunray Oil Corp.—Crosby Gaige has been elected president to succeed C. C. Hamilton who continues as a director. Mr. Gaige has been a director of the company.

Southern Pipe Line Co.—Sale of one line of this company's system to Manufacturers' Light & Heat Co. has been approved by Pennsylvania Public Service Commission. Directors will meet probably before June 30 to pass on a dividend from the stock reduction account.

Lone Star Offers Rights

PITTSBURGH, May 3.—Lone Star Gas Co. has offered stockholders of May 31 record rights to subscribe to one share of common stock at $22.50 a share for each six shares held that date. New stock may be paid for in cash July 3 of $11.25 cash that date and $5.63 Oct. 3 and $5.62 Jan. 3, 1931. The stock pays $1 dividend a year at present.

Vacuum in Cincinnati

CINCINNATI, May 3.—Controlling interest in the Queen City Petroleum Products Co. has been bought by the Vacuum Oil Co. The Queen City company has 30 service stations in metropolitan Cincinnati.

Shell Buys Portsmouth Oil

ST. LOUIS, May 1.—The Portsmouth Oil Co., marketers at Portsmouth, O., was purchased May 1 by the Shell Petroleum Corp. for approximately $250,000. The sale included nine service stations, one a new super station at Portsmouth, and a modern bulk plant with seven storage tanks of 126,000 gallons capacity.

Most of the operating personnel of the Portsmouth company is being retained by the Shell. G. W. Vandervort is president; R. W. Calvert, vice president; F. C. Fuller, secretary; G. S. Monroe, treasurer, and John McMillan, general manager.

The Portsmouth company was organized in 1920 and began as a Shell jobber in 1923 with one service station. For four years it marketed Shell products under its own brand names and from 1927 on, under the Shell trademark.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

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SALESMAN

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For construction and maintenance in 15,000 barrel Oklahoma refinery. Married, graduate preferred. Give full details and snapshot in first application. None other will be considered.

Address Engineer, c/o National Petroleum News, Tulsa, Okla.

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or chemical engineer by Mid-Continent Refiner for laboratory and plant development. Must have thorough training in chemistry and experience in testing petroleum products. Give full details concerning age, education, experience, salary expected, snapshot of self and references in application, otherwise will not be considered. Address Chemist.

c/o National Petroleum News, Tulsa, Okla.

DIVISION MANAGER WANTED

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Standard Oil Stocks on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Outstanding Capital	Par Value	Stocks	Div Rate	Last Paid	Transactions Week Ended May 3 Sales	First	High	Low	Last	Change
22¾	14⅞	18¾	14¼	£4,126,460	£ 1	Anglo-American Oil	36c	June 5, 29	.....	.....	.....	.....	.....	.....
21¼	15	18⅛	12¼	.....	....	do certificates	36c	June 5, 29	100	18	18⅛	18	18⅛	0
20½	14⅜	19	11	.....	£ 1	do ctfs. non-voting	36c	June 5, 29	100	19	*19	18	18	— ⅛
5	1¼	2½	½	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	100	¾	¾	¾	¾	0
9¾	3¼	4⅛	1	$10,000,000	$50	do pfd	.....	.....	.....	.....	.....	.....	.....	.....
56	44½	46½	23	$1,000,000	25	Borne-Scrymser	$1 S.A.	Oct. 15, 29	.....	.....	.....	.....	.....	.....
76	58	74¼	55	10,000,000	50	Buckeye Pipe Line	$1Q	Mar. 15, 30	200	58	59	58	59	+ 1¼
161	117¼	210	130	3,000,000	25	Chesebrough Mfg	‡$1Q	Mar. 31, 30	.....	.....	.....	.....	.....	.....
23	16	29	8⅛	36,123,350	10	Continental Oil	.....	Dec. 15, 27	.....	.....	.....	.....	.....	.....
17½	9½	11¾	5⅝	.....	N.P.	Creole Petroleum	.....	.....	8,200	6⅝	6⅞	6	6	— ⅛
82	67	95	40	1,500,000	50	Cumberland Pipe Line	$1Q	Mar. 15, 30	250	62¼	62¼	61	61	— 4
88	64⅛	70½	42	5,000,000	100	Eureka Pipe Line	$1Q	Feb. 1, 30	200	44⅛	44⅛	44	44	+ ⅛
13	4¼	7	3	16,000,000	100	Galena Signal Oil	.....	June 30, 25	160	5	5⅛	4½	4½	— ½
86	26	90	73½	4,000,000	100	do new pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
89¾	35	88	71½	2,000,000	100	do old pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
114¾	59¼	128	74½	73,685,700	25	Humble Oil & Refining	50cQ	Apr. 1, 30	18,100	115	116	95⅜	95⅛	—19¼
290½	176½	340½	260	20,000,000	100	Illinois Pipe Line	$4.50	Mar. 25, 30	.....	.....	.....	.....	.....	.....
104	56¾	41	22	(sh) 26,421,768	N.P.	Imperial of Canada	12½cQ	Mar. 1, 30	7,400	27½	27¾	24¾	24¾	— 2⅛
91⅞	74⅝	41⅞	26	$1,000,000	$10	Indiana Pipe Line	‡50cQ	Feb. 15, 30	900	38	38	38	38	+ ½
55	35	37½	15	(sh) 14,247,088	N.P.	International Petroleum	25c	Mar. 15, 30	14,800	22⅞	23	20⅛	20⅛	— 2⅞
32⅜	19⅜	25⅞	10½	$6,363,350	12.50	National Transit Co	25cQ	Mar. 15, 30	800	19⅞	19⅞	19	19	— ⅝
75	38¼	85	72	1,000,000	10	New York Transit	‡40cQ	Jan. 15, 30	.....	.....	.....	.....	.....	.....
....	....	.....	.....	.....	....	do new	.....	.....	.....	.....	.....	.....	.....	.....
69	56¼	63	40¼	2,000,000	50	Northern Pipe Line	$2 S.A.	Jan. 2, 30	.....	.....	.....	.....	.....	.....
83½	58½	79⅞	64½	60,000,000	25	Ohio Oil Co	‡50cQ	Mar. 15, 30	4,500	74¼	74½	72	72	— 2
84	28	44½	18⅝	10,000,000	25	Penn Mex. Fuel	$1	Dec. 14, 29	100	23¾	25	23¾	23¾	— 3¼
220	167	50	21⅜	4,000,000	25	Solar Refining	$1.25 S.A.	Dec. 20, 29	200	24	24	23⅞	23⅞	+ ⅜
19	12	23½	13	1,000,000	10	Southern Pipe Line	$1	Mar. 1, 30	700	19½	19¾	19	19⅝	+ ⅛
71⅞	36¾	60¼	35⅛	30,000,000	25	South Penn Oil	‡50cQ	Mar. 31, 30	900	43¼	43¼	39½	39½	— 4
102	70	70	45	1,750,000	50	South West Pa. Pipe Lines	$1	Apr. 1, 30	50	51	51	51	51	— 1
95⅞	70⅞	63	45	348,175,069	25	S. O. Indiana	62½cQ	Mar. 15, 30	46,800	57¾	57⅞	51½	51½	— 6⅛
27¾	15	40	18	8,000,000	25	S. O. Kansas	50cQ	Mar. 15, 30	.....	.....	.....	.....	.....	.....
49	44	46¾	29	25,654,516	10	S. O. Kentucky	‡40cQ	Mar. 31, 30	21,700	39½	39⅝	35½	35½	— 4⅛
54⅜	39⅞	50¼	40	4,649,225	25	S. O. Nebraska	‡62½cQ	Mar. 20, 30	500	48⅞	48⅞	48	48	— ¾
34	71	129	60	14,000,000	25	S. O. Ohio	62½cQ	Apr. 1, 30	500	97⅞	97⅞	90	90	— 7⅞
25	116	125½	106	7,000,000	100	do pfd	$1.75Q	Mar. 1, 30	30	119	119	119	119	+ ⅛
23½	16	18	5⅜	861,466	25	Swan Finch	30c	Jan. 15, 29	.....	.....	.....	.....	.....	.....
111	72	133¾	75	126,154,000	25	Vacuum Oil	$1Q	Mar. 20, 30	26,700	94⅛	97⅞	90¼	90¼	— 3¾

*New High †New Low ‡Also Extras.

Independent Oils on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Par Value	Stocks	Transactions Sales	Week Ended May 3 First	High	Low	Last	Change
1½	.53	.72	.125	$5	Amer. Cons. Oilfields	2,600	¼	¼	⅛	¼	— ⅛
9½	3⅛	8⅛	1⅛	N.P.	Amer. Maracaibo	81,900	3⅞	4½	3⅜	3½	— ⅜
4½	2¼	4¾	1	$10	Argo Oil	.....	.....	.....	.....	.....	.....
3¾	3⅜	26	3¼	N.P.	Arkansas Nat. Gas	87,000	14¾	15	11¾	11¾	— 3½
....	....	24¾	6½	N.P.	do A	25,000	14⅝	14⅞	11½	11½	— 3⅜
....	....	9	4	10	do pfd	6,000	8	8⅛	8	8	0
55	32¾	70	50	N.P.	British American Oil	.....	.....	.....	.....	.....	.....
23⅞	3¾	4⅞	⅞	25c	Carib Syndicate	1,700	2¾	2¾	1¾	2	— ¾
....	....	68½	20	N.P.	Cities Service new	96,700	42¾	43⅛	29½	30½	—12⅝
103½	94½	99¼	84	100	do pfd	900	92¾	93	92⅛	92⅛	— ¾
9⅝	8⅞	9¼	8	10	do pref. B	.....	.....	.....	.....	.....	.....
97	88½	96	81	100	do pref. BB	.....	.....	.....	.....	.....	.....
2¼	1	1½	¼	1	Colombia Syndicate	7,500	1⅛	¾	½	½	— ⅛
17¾	9¾	15	3⅞	N.P.	Colon Oil	2,200	6⅞	6⅞	6	6	— 1
8⅞	6¼	11⅛	2½	10	Consolidated Royal	100	4	4	4	4	+ ⅛
....	....	135	42	N.P.	Cosden Oil Co	2,800	57½	57½	50	50	— 7
....	....	82	55	....	do pfd	.....	.....	.....	.....	.....	.....
3¼	.76	2½	¼	N.P.	Crown Central	200	⅝	⅝	⅝	⅝	— ⅛
15	6¾	11¾	4	N.P.	Crystal Oil	.....	.....	.....	.....	.....	.....
50	48	51⅛	51⅛	$100	do pfd	.....	.....	.....	.....	.....	.....
33½	8⅛	26	6½	N.P.	Darby Petroleum	400	11¾	11¾	10¼	10¼	— 1¾
2⅞	1	11	2	N.P.	Derby Oil & Refining	7,300	9	9	7½	7½	— 1⅞
21⅜	7½	60	5	N.P.	do pfd	400	54	54	53	53	— 3
165	101¾	209	115	$25	Gulf Oil Corp	48,800	164	166⅞	145¼	145½	—19¼
7½	5⅜	7½	1⅜	5	Homaokla Oil	800	3⅞	4	3⅞	4	0
....	....	53½	5	$1	Indian Territory	12,700	46⅛	46⅛	41⅞	41⅞	— 4⅜
3⅜	1	2⅞	⅜	10	Intercontinental Pet.	24,800	1½	1⅝	1¼	1⅜	— ¼
3	¼	3⅝	1¼	N.P.	Kirby Petroleum	1,800	2½	2½	2¼	2¼	— ⅛
9⅜	5½	6⅜	1	N.P.	Leonard Oil & Dev	4,300	3¾	4¼	3	3	— 1⅛
43⅜	20	38⅞	18	N.P.	Lion Oil & Refg	1,900	26⅛	28	24	24	— 3
....	....	67⅞	28	N.P.	Lone Star Gas	19,200	53⅝	53⅝	47⅝	47⅝	— 6
1⅞	.50	1¼	¼	1	Magdalena Syndicate	8,400	½	½	⅜	⅜	— ⅛
48½	32	38½	12	N.P.	Margay Oil	300	15⅛	15⅛	15⅛	15⅛	+ ⅝
8	2¾	7½	2	N.P.	Mexico-Ohio Oil	400	4⅛	4⅛	3⅛	3½	— ⅜
1¾	....	42	8	N.P.	Missouri-Kan. P. L	78,800	30⅜	30⅝	29⅜	30⅜	0
1¾	.76	1⅜	¼	1	Mountain & Gulf	29,000	⅝	⅝	⅝	⅝	0
28⅞	19½	22⅞	7	10	Mountain Producers	4,300	11¼	12	11	11½	0
....	....	43⅞	24	N.P.	Nat. Fuel Gas (new)	6,200	36	36¼	31⅞	31⅞	— 4⅜
5⅜	4¼	5	2¼	5	New Bradford	1,300	3	3	2⅞	3	0
5½	3	3⅞	2¾	10	New England Fuel	800	3	3	3	3	0
11⅞	7⅛	9⅜	2¼	1	New Mex. & Ariz	1,900	5¾	5¾	5	5	— ¾
15½	11½	24½	10⅜	25	New York Petrol	1,200	12	12½	11½	12	+ ⅛
13¼	8⅛	18½	6¼	N.P.	North Cent. Texas	100	9¼	9¼	9¼	9¼	— ¾
....	....	19¼	8⅛	N.P.	Oil Stock, Ltd. A	400	10¾	10¾	10⅛	10⅛	— ⅜
....	....	18¼	8½	N.P.	do B	200	11	11	11	11	0
26¼	20	26⅜	12⅛	N.P.	Pacific Western Oil	600	18	18⅜	17½	17¾	— ¼
6	2¼	3½	½	N.P.	Pandem Oil	7,800	1¾	2	1⅜	1¾	0
15⅜	8½	10½	2½	N.P.	Pantepec Oil	900	3	3⅜	3	3	— ⅛
20	10⅜	25½	13⅛	$25	Paragon Refg. B ctfs.	.....	.....	.....	.....	.....	.....
....	....	34½	17	N.P.	Petroleum Corp	72,700	29	29	23⅝	23⅝	— 4⅜
31⅜	26½	37	22	N.P.	Plymouth Oil	900	24⅝	24⅞	22½	23	— 2¼
18	8	16	9	25	Red Bank Oil	.....	.....	.....	.....	.....	.....
13	4⅛	8½	1⅛	N.P.	Reiter-Foster	2,700	4½	4½	4	4	— ¼
31½	23¼	25½	19	$25	Richfield pfd	200	21	21	21	21	— ½
....	....	29	13	....	Root Refining pfd	.....	.....	.....	.....	.....	.....
12	4⅜	11	3	N.P.	Ryan Consolidated	500	6½	6½	6	6	— ⅜
7¼	5⅛	5⅞	1⅞	$10	Salt Creek Cons	200	2	2	2	2	— ⅛
35	23¼	25⅞	9	10	Salt Creek Prod	1,300	13½	13⅞	13	13	+ 1
3½	1	2½	½	5	Savoy Oil	.....	.....	.....	.....	.....	.....
40	27	33⅜	10	25	Shreveport El Dorado	.....	.....	.....	.....	.....	.....
....	....	24	9	N.P.	Southland Royalty	22,400	12¼	17⅞	12¼	13⅛	+ ⅞
....	....	12	4	N.P.	Sunray Oil	1,600	8	8½	7	7	— ⅞
....	....	23	7⅛	N.P.	Texon Oil & Land new	400	11¼	11¼	10¾	10¾	— ⅞
22⅞	13	16⅞	11⅝	$10	Tidal Osage	.....	.....	.....	.....	.....	.....
21¾	13⅜	16½	10⅛	10	do not-voting	.....	.....	.....	.....	.....	.....
93¾	75	155	80	100	Transcontinental pfd	.....	.....	.....	.....	.....	.....
74¼	18	81⅜	8⅞	10	Venezeula-Mexico	300	9	9	†8⅞	8⅞	— 5⅝
9⅛	4¾	6½	1⅜	3	Venezuelan Petrol	4,100	3⅛	3½	3⅛	3⅛	— ⅛
....	....	66	2¼	N.P.	White Star Oil	.....	.....	.....	.....	.....	.....
8¼	4⅞	9⅛	2	1	Woodley Petroleum	600	4⅜	4⅜	3⅞	3⅞	— ⅝
⅝	⅛	5⅜	¼	25	Y Oil & Gas	2,700	2	2	1¾	1¾	— ¼

*New High †New Low

New York Bonds

Week Ending May 2, 1930

	High	Low	Last	Change
Assoc. Oil gold 6s	102½	102½	102½	0
Atlantic Refg. deb. 5s	102	101¾	101¾	— ¼
Cal. Pet. 5s	100	99¼	100	+ ½
Cal. Pet. 5½s	102	101½	102	+ ¼
General Pet. 5s	102½	101¾	101¾	— ⅛
Humble Oil & Refg. 5s	101¾	101¼	101⅝	+ ⅜
Humble Oil & Refg. 5½s	102	101⅝	102	0
Mid-Continent Pet. 6½s	.....	.....	.....	.....
Pan Amer. P & T 6s	104	102⅞	103	— 1
Pan Amer. P & T 6s	97⅝	97	97½	0
Phillips Pet. 5½s	96	91	96	+ ⅞
Pure Oil 5½s	100⅛	100	100	0
Shell Union Oil 5s	97⅜	96½	97⅜	— ⅛
Shell Union Oil with war.	101¼	100⅜	100¾	+ ⅛
Sinclair Con. Oil 7s	104	103⅝	103⅝	— ⅛
Sinclair Con. Oil 6½s	102⅝	102⅛	102⅝	+ ⅛
Sinclair Con. Oil 6s D	100⅝	100⅜	100⅝	— ⅛
Sinclair Con. Crude 5½s	100¼	99½	100	0
Sinclair Pipeline 5s	98¼	98	98¼	+ ¼
Skelly Oil 5½s	97	96⅛	96⅛	— ⅞
S. O. N. J. 5s	103¼	102¼	103¼	+ ½
S. O. N. Y. 4½s	97½	96¾	97½	+ ⅞
Transc. Oil 6½s war	103⅝	101½	101½	— 1½
Transc. Oil 6½s ex-war.	96	94	94	— 3
Union Oil of Calif. 6s A	108¼	107¾	108¼	+ ½
Union Oil of Calif. 1st 5s C	101¾	101¾	101¾	0
Union Oil of Calif. 5s C	100¼	100	100	0
Warner-Quinlan 6s	93	91⅝	91⅝	+ ⅛
White Eagle Oil 5½s war.	106⅛	106⅛	106⅛	— ⅞

New York Curb Bonds

Week Ending May 2, 1930

	High	Low	Last	Change
Cities Serv. 5s '66	86½	86	86	— ⅜
Cities Serv. G. 5½s '42	88½	87⅞	97⅞	—1⅛
Cities Serv. G. P. 6s '43	93¼	93	93	— ⅛
Cont. Oil 5½s '37	96	96	96	— ¾
Empire O & R 5½s '42	88½	87	87	— ¾
Gulf Oil 5s '37	101¾	101⅜	101¾	0
Gulf Oil 5s '47	103⅝	102¼	103½	+ ¼
Indep. Oil 6s '39	107¾	105	105	— ½
Pure Oil 6½s '33	98¼	97½	98	+ ½
Sun Oil 5½s '39	102	101½	102	+ ½
Valvoline Oil 7s '37	103½	103½	103½	+ ½

Oil Dividends

	Amount	Payable	Stock of Record
Illinois Pipe Line	$4.50	June 14	May 22
Ohio Oil q	$1	June 14	May 15
do pfd. q	$1.50	June 14	May 22
Pure Oil q	37½c	June 1	May 9
S. O. California q	62½c	June 16	May 15
S. O. New Jersey q	25c	June 16	May 17
do extra	25c	June 16	May 17
S. O. New York q	40c	June 16	May 9
S.O. Ohio pfd. q	$1.75	June 2	May 9
Swan Finch pfd. q	43¾c	June 3	May 15
Sun Oil q	25c	June 16	May 26
do pfd. q	$1.50	June 2	May 10